This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

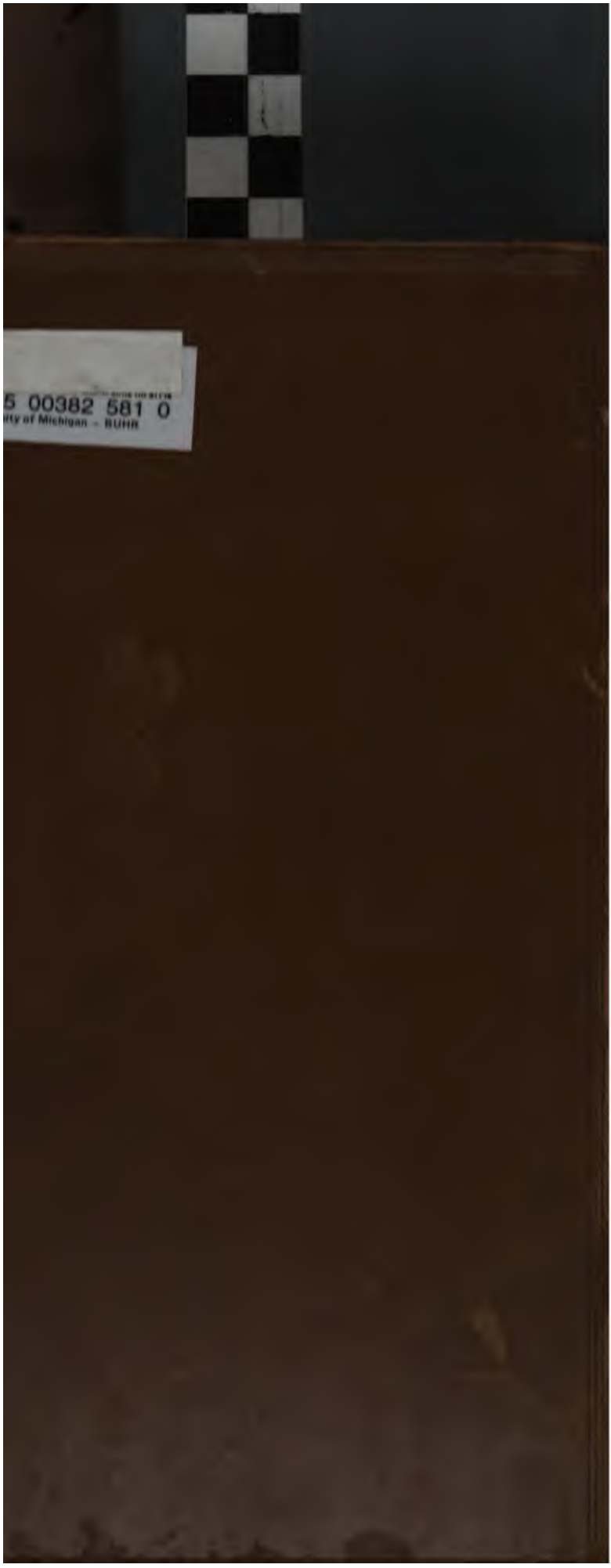
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

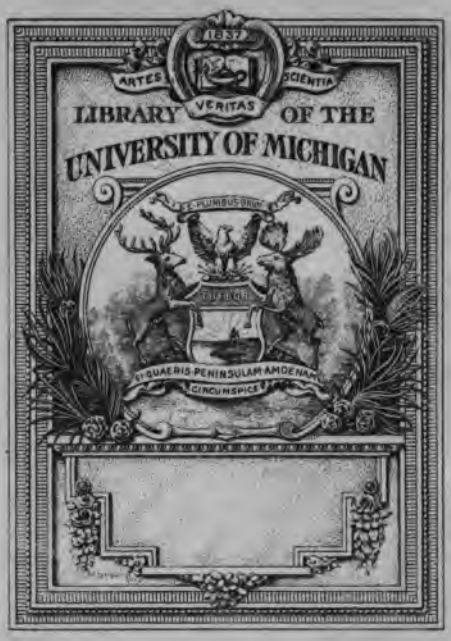
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`


5 00382 581 0
ity of Michigan - BUHR


1837
ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
SUAERIS PENINSULAM AMOENAM
CIRCUMSPICE

MEDICO-CHIRURGICAL

TRANSACTIONS.

VOL. XIV.—PART I.

G. WOODFALL, ANGEL COURT, SKINNER-STREET, LONDON.

MEDICO-CHIRURGICAL

75893

TRANSACTIONS,

PUBLISHED BY THE

MEDICAL AND CHIRURGICAL SOCIETY,

OF

LONDON.

VOLUME THE FOURTEENTH.

LONDON:

PRINTED FOR LONGMAN, REES, ORME, BROWN, AND GREEN,

PATERNOSTER ROW.

1828.

OFFICERS AND COUNCIL

OF THE

MEDICAL AND CHIRURGICAL SOCIETY

OF

LONDON,

ELECTED MARCH 1, 1828.

PRESIDENT,

BENJAMIN TRAVERS, Esq. F.R.S.

VICE-PRESIDENTS.	RICHARD BRIGHT, M.D. F.R.S. THOMAS ROSE, Esq. ARCHIBALD BILLING, M.D. C. ASTON KEY, Esq.
TREASURERS.	PETER M. ROGET, M.D. Sec. R.S. HENRY EARLE, Esq. F.R.S.
SECRETARIES.	EDWARD J. SEYMOUR, M.D. EUSEBIUS ARTHUR LLOYD, Esq.
LIBRARIANS.	MARSHALL HALL, M.D. JAMES M. ARNOTT, Esq.
OTHER MEMBERS OF THE COUNCIL.	WILLIAM BAKER, M.D. FREDERIC C. SKEY, Esq. HENRY DAVIES, M.D. JAMES POWELL, Esq. ALEXANDER GORDON, M.D. JOHN FLINT SOUTH, Esq. ALEXANDER TWEEDIE, M.D. C. JULIUS ROBERTS, M.D. THOMAS WILLIAM CHEVALIER, Esq. WILLIAM GAIRDNER, M.D.

MEMBERS

OF THE

MEDICAL AND CHIRURGICAL SOCIETY

OF

LONDON.

April, 1828.

JOHN ABERNETHY, Esq. F.R.S. 14, *Bedford Row.*

Walter Adam, M.D. *Physician to the Royal Public Dispensary, Edinburgh.*

Thomas Addison, M.D. *Assistant Physician and Lecturer at Guy's Hospital; 26, Hatton Garden.*

Joseph Ager, M.D. 69, *Margaret Street, Cavendish Square.*

James Ainge, Esq. *Fareham, Hants.*

George F. Albert, Esq. *Surgeon Extraordinary to the King.*

Thomas Alcock, Esq. 11, *New Burlington Street.*

James Alderson, M.D. *Physician to the Public Dispensary;* 23, *Lincoln's Inn Fields.*

Henry Alexander, Esq. *Surgeon and Oculist in Ordinary to the King and the Princesses, and Surgeon to the Royal Infirmary for Diseases of the Eye;* 6, *Cork Street, Bond Street.*

Matthew Allen, M.D. *Leopard's Lodge, Loughton, Essex.*

Alexander Anderson, Esq. 18, *Brompton Row.*

John Goldwyer Andrews, Esq. *Surgeon to the London Hospital; St. Helen's Place.*

Thomas F. Andrews, M.D. *Norfolk, Virginia.*

William Ankers, Esq. *Knutsford, Cheshire.*

William Annandale, Esq. 3, *Great Queen Street, Westminster.*

Professor Antommarchi, *Florence.*

Thomas J. Armiger, Esq. *Surgeon Extraordinary to the Duke of Sussex, and Assistant Surgeon to the London Hospital; Hackney.*

John Armstrong, M.D. 48, *Russel Square.*

William Withering Arnold, M.D. *Physician to the Infirmary and Lunatic Asylum at Leicester.*

Thomas Graham Arnold, M.D. *Stamford.*

James M. Arnott, Esq. LIBRARIAN, 17, *New Burlington Street.*

Neil Arnott, M.D. *Bedford Square.*

John Ashburner, M.D. M.R.I.A. *Calcutta.*

Samuel Ashwell, Esq. *Lime Street Square.*

Charles Averill, Esq. *Surgeon to the Casualty Hospital, Cheltenham.*

Joseph Ayre, M.D. 14, *Somerset Street, Portman Square.*

William Babington, M.D. F.R.S. *Aldermanbury.*

Benjamin G. Babington, M.D. *Physician to the Deaf and Dumb Institution; Finsbury Square.*

John Badeley, M.D. *Chelmsford.*

John Carr Badeley, M.D. *Physician to the Asylum for the Recovery of Health;* 34, *Half Moon Street.*

John H. Badley, Esq. *Dudley.*

William Baker, M.D. *London.*

Edward Barlow, M.D. *Bath.*

John Barnett, Esq. *Charter-house Square.*

John Baron, M.D. *Physician to the Infirmary, Gloucester.*

James Bartlet, M.D. *Physician to the Mary-le-bone Dispensary;* 14, *Bentinck Street.*

Charles Bell, Esq. F.R.S. *Surgeon to the Middlesex Hospital; Professor of Physiology and Clinical Surgery in the London University;* 34, *Soho Square.*

George Bell, Esq. F.R.S. ED. *Edinburgh.*

Joseph Bell, Esq. *Surgeon to the Royal Infirmary, Edinburgh.*

Thomas Bell, Esq. F.R.S. L.S. and G.S. *Lecturer on Diseases of the Teeth at Guy's Hospital;* 17, *New Broad Street.*

Titus Berry, Esq. *Surgeon to the Forces, and Surgeon to the Mary-le-bone Dispensary;* 32, *George Street, Hanover Square.*

Stephen Bertin, Esq. 63, *Berners Street, Oxford Street.*

John Jeremiah Bigsby, M.D. *Newark, Nottinghamshire.*

Archibald Billing, M.D. VICE-PRESIDENT, *Physician to the London Hospital;* 10, *Bedford Place.*

William Birch, Esq. *Barton, Lincolnshire.*

George Birkbeck, M.D. *Physician to the General Dispensary;* 50, *Broad Street.*

Thomas Bishop, Esq. *Southampton.*

Adam Black, M.D. 17, *Grosvenor Street.*

Thomas Blair, M.D. *Brighton.*

Sir Gilbert Blane, Bart. M.D. F.R.S. *Physician to the King;* 8, *Sackville Street, Piccadilly.*

Thomas Blizard, Esq. F.R.S.

Henry C. Boisragon, M.D. *Cheltenham.*

Louis Henry Bojanus, M.D. *Wilna.*

G. Buckley Bolton, Esq. 3, *King Street, Saint James's Square.*

Hugh Bone, M.D. *Physician to the Forces.*

John Booth, M.D. *Physician to the Infirmary, and General Dispensary at Birmingham.*

John Bostock, M.D. F.R.S. 22, *Upper Bedford Place, Russel Square.*

Robert Bree, M.D. F.R.S. 17, *George Street, Hanover Square.*

Gilbert Breschet, M.D. *Paris.*

Richard Bright, M.D. F.R.S. VICE-PRESIDENT, *Physician to Guy's Hospital;* 14, *Bloomsbury Square.*

Benjamin C. Brodie, Esq. F.R.S. *Surgeon to St. George's Hospital;* 16, *Saville Row.*

Benjamin Brookes, Esq. 37, *Bedford Street, Covent Garden.*

Samuel D. Broughton, Esq. *Surgeon to the Second Regiment of Life Guards, and to the St. George's and St. James's Dispensary;* 12, *Great Marlborough Street.*

Ninian Bruce, Esq. A.M. *Surgeon to the Forces, and to the Royal Military College, Sandhurst.*

Samuel Barwick Bruce, Esq. *Surgeon to the Forces; Ripon, Yorkshire.*

M. Pierre Brulatour, *Surgeon to the Hospital, Bourdeaux.*

B. Bartlet Buchanan, M.D.

John Burne, M.D. 24, *Spring Gardens.*

George Man Burrows, M.D. *Montague Street, Russel Square.*

Samuel Burrows, Esq.

Francis Burton, M.D. *Surgeon to the Twelfth Royal Lancers.*

John Butter, M.D. F.R.S. & F.L.S. *Physician to the Plymouth Eye Infirmary; Plymouth.*

Harry Carter, M.D. *Physician to the Kent and Canterbury Hospital; Canterbury.*

Richard Cartwright, Esq. 34, *Bloomsbury Square.*

Samuel Cartwright, Esq. *Burlington Street.*

Henry Seymour Casey, Esq. *Coram Street.*

Richard Chamberlaine, Esq. *Kingston, Jamaica.*

William Frederick Chambers, M.D. *Physician to St. George's Hospital, and Examining Physician to the Hon. East India Company; Brook Street.*

Thomas Chapman, Esq. *Wandsworth.*

Thomas William Chevalier, Esq. 20, *South Audley Street.*

John Cheyne, M.D. *Dublin.*

Sir Michael Benignus Clare, M.D. *Physician General of Jamaica; Spanish Town, Jamaica.*

James Clark, M.D. 21, *George Street, Hanover Square.*

John Clendinning, M.D. 5, *Parliament Street.*

Robert Cole, Esq. F.L.S. *Holybourne, Hampshire.*

Edward Coleman, Esq. *Veterinary Surgeon General; Veterinary College, St. Pancras.*

John Charles Collins, M.D. *Swansea.*

Henry Combe, Esq. 2, *Caroline Street, Bedford Square.*

John Conolly, M.D. *Professor of the Nature and Treatment of Diseases in the London University.*

John Cooke, M.D. F.R.S. and F.A.S. 71, *Gower Street.*

Sir Astley Paston Cooper, Bart. F.R.S. *Surgeon to the King, Consulting Surgeon to Guy's Hospital; Conduit Street.*

Bransby B. Cooper, Esq. *Surgeon to Guy's Hospital;* 2, *New Street, Spring Gardens.*

Samuel Cooper, Esq. *Surgeon to the Forces, and to the King's Bench and Fleet Prisons;* 71, *Great Russel Street, Bloomsbury.*

George Cooper, Esq. *Brentford.*

Benjamin Cooper, Esq. *Stamford.*

Thomas Copeland, Esq. 4, *Golden Square.*

James Copland, M.D. *Senior Physician to the Royal Infirmary for Children, and Consulting Physician to Queen Charlotte's Lying-in Hospital;* 1, *Bulstrode Street.*

William Cother, Esq. *Gloucester.*

William Coulson, Esq. *Surgeon to the Aldersgate Street Dispensary;* 59, *Aldersgate Street.*

Stewart Crawford, M.D. *Bath.*

Sir Alexander Crichton, M.D. F.R.S. and F.L.S. *Physician in Ordinary to their Imperial Majesties the Emperor and Dowager Empress of all the Russias.*

John Cross, Esq. *Surgeon to the Norfolk and Norwich Hospital.*

Hinchman Crowfoot, Esq. *Beccles, Suffolk.*

William Cullen, M.D. *Surgeon to the New Town Dispensary, Edinburgh.*

William Cumin, M.D. *Professor of Botany at the Glasgow Institution, and Surgeon to the Royal Infirmary, at Glasgow.*

Christopher John Cusack, Esq.

Adolphe Dalmas, M.D. *Paris.*

George Darling, M.D. 6, *Russel Square.*

Francis Sacheverel Darwin, M.D. *Rowsley, near Wirksworth.*

Henry Davies, M.D. *Physician to the British Lying-in Hospital, Brownlow Street;* 29, *Conduit Street.*

David D. Davis, M.D. *Physician to the Duchess of Kent, and to the Maternity Charity; Obstetric Physician to the Northern Dispensary; Professor of Midwifery in the London University;* 5, *Fitzroy Square.*

Thomas Davis, Esq. *Andover.*

Thomas Davis, Esq. 24, *George Street, Hanover Square.*

James Dawson, Esq. *Liverpool.*

J. Delpech, *Professor of Clinical Surgery, and Chief Surgeon to the Hospital of St. Eloi, at Montpelier.*

Gabriel J. M. De Lys, M.D. *Physician to the Infirmary, and General Dispensary, at Birmingham.*

Alexander Denmark, M.D. *Physician to the Fleet; Southampton.*

David James Hamilton Dickson, M.D. F.R.S. Ed. & F.L.S. *Physician to the Fleet; Clifton.*

John Sommers Down, M.D. *Physician in Ordinary to his Royal Highness the Duke of Clarence; Southampton.*

Andrew Duncan, M.D. F.R.S. Ed. *Professor of the Institutions of Medicine in the University of Edinburgh.*

Andrew Duncan, Jun. M.D. F.R.S. Ed. *Professor of Materia Medica in the University of Edinburgh.*

Sir William Dundas, Bart.

Henry Earle, Esq. F.R.S. Treasurer, *Surgeon to St. Bartholomew's Hospital, and to the Foundling Hospital;* 28, *George Street, Hanover Square.*

George Edwards, Esq.

C. C. Egerton, Esq. *India.*

Philip Elliot, M.D. *Bath.*

John Elliotson, M.D. *Physician to St. Thomas's Hospital;* 15, *Grafton Street, Bond Street.*

Thomas Noble Elwyn, Esq. 36, *Albemarle Street.*

Griffith Francis Dorset Evans, Esq. *Shrewsbury.*

John Richard Farre, M.D. *Charter-house Square.*

William Fergusson, M.D. *Inspector of Hospitals; Windsor.*

Thomas Filkin, M.D. *Assistant-Physician to the Fever Hospital;* 10, *Charlotte Street, Bedford Square.*

Charles Fergusson Forbes, M.D. *Deputy Inspector of Hospitals, and Physician to the Surrey Dispensary;* 25, *Argyll Street.*

James Forbes, M.D. *Deputy Inspector of Hospitals; Chatham.*

Robert T. Forster, Esq. *Southwell, Nottinghamshire.*

Thomas Forster, M.D. *Hartfield Lodge, East Grinsted.*

Algernon Frampton, M.D. *Physician to the London Hospital; New Broad Street.*

John W. Francis, M.D. *Professor of Materia Medica in the University of New York.*

George Freer, Esq. *Surgeon to the Infirmary at Birmingham.*

George Frederick Furnival, Esq. *Egham.*

William Gairdner, M.D. 12, *Bolton Street.*

John Samuel Gaskoin, Esq. 32, *Clarges Street.*

Henry Gaulter, Esq.

Richard Francis George, Esq. *Bath.*

Richard Gillies, M.D. *Bath.*

George Goldie, M.D. *York.*

William Goodlad, Esq. *Bury, Lancashire.*

Richard Goolden, Esq. *Maidenhead.*

Theodore Gordon, M.D. *Physician to the Forces;* 5, *Hanover Street.*

James Alexander Gordon, M.D. *Physician to the Islington Dispensary;* 2, *Finsbury Square.*

Robert Graham, M.D. F.R.S.Ed. *Professor of Botany in the University of Edinburgh.*

Thomas Graham, Esq. *Turnham Green.*

R. D. Grainger, Esq. *Lecturer on Anatomy; Broad Street Buildings.*

Nathaniel Grant, Esq. 21, *Thayer Street, Manchester Square.*

Joseph Henry Green, Esq. *Surgeon to St. Thomas's Hospital;* 46, *Lincoln's Inn Fields.*

Frederick Greenfield, Esq. 55, *White Cross Street, Cripplegate.*

John Grove, M.D. *Salisbury.*

John Gunning, Esq. *Surgeon Extraordinary to the King, Inspector of Hospitals; Paris.*

George James Guthrie, Esq. *Deputy Inspector of Hospitals, and Surgeon to the Royal Westminster Infirmary for Diseases of the Eye;* 2, *Berkeley Street, Piccadilly.*

Sir Henry Halford, Bart. M.D. F.R.S. and F.A.S. *President of the Royal College of Physicians, Physician in Ordinary to the King;* 16, *Curzon Street.*

Marshall Hall, M.D. Librarian; 15, *Keppel Street.*

Thomas Hammerton, Esq. 111, *Piccadilly.*

John Haviland, M.D. *Regius Professor of Physic in the University of Cambridge.*

Francis Bisset Hawkins, M.D. 30, *Golden Square.*

Cæsar Hawkins, Esq. *Lecturer on Anatomy, Surgeon to the Asylum for Recovery of Health; Halfmoon Street.*

Thomas Emerson Headlam, M.D. *Newcastle-upon-Tyne.*

William Henry, M.D. F.R.S. *Manchester.*

Vincent Herberski, M.D. *Professor of Medicine in the University of Wilna.*

William Hill, Esq. *Wootton-under-Edge, Gloucestershire.*

Joseph Hodgson, Esq. *Birmingham.*

Henry Holland, M.D. F.R.S. 25, *Lower Brook Street, Grosvenor Square.*

James Home, M.D. *Professor of the Practice of Physic in the University of Edinburgh.*

Thomas Charles Hope, M.D. F.R.S. *Professor of Chemistry in the University of Edinburgh.*

John Howell, M.D. F.R.S. Ed. *Clifton.*

Edward Howell, M.D. *Swansea.*

John Howship, Esq. 34, *George Street, Hanover Square.*

Robert Hume, M.D. *Inspector of Hospitals*; *Curzon Street, May Fair.*

William Hunter, M.D. *Assistant Surgeon to the Coldstream Regiment of Guards.*

William Hutchinson, M.D.

Alexander Copland Hutchison, Esq. F.R.S. L. and Ed. *Surgeon Extraordinary to the Duke of Clarence, and Senior Surgeon to the Westminster General Dispensary*; 3, *Dutchess Street, Portland Place.*

John Hyslop, Esq. *Surgeon to the East India Company's Asiatic Seamen*; 1, *Upper Bedford Place.*

William Ingram, Esq. 43, *Dorset Street.*

Gustavus Irwin, M.D. *Surgeon-General and Inspector*; *Ordnance Medical Department, Woolwich.*

Henry Irwin, M.D. *Deputy Inspector of Hospitals*; *Sligo.*

John B. James, M.D.

Henry Jeffreys, Esq. *Surgeon to St. George's Hospital*; 33, *Clarges Street, Piccadilly.*

James Johnson, M.D. *Physician in ordinary to H. R. H. the Duke of Clarence*; 8, *Suffolk Place, New Pall Mall.*

Edward Johnson, M.D. *Weymouth.*

Edwin Godden Jones, M.D. *Southampton.*

George Hermann Kaufman, M.D. *Hanover.*

Robert Keate, Esq. *Surgeon to their Royal Highnesses the Duchess of Gloucester and Prince Leopold, and to St. George's Hospital;* 15, *Albemarle Street.*

Robert Masters Kerrison, M.D. 12, *New Burlington Street.*

Charles Aston Key, Esq. VICE-PRESIDENT, *Surgeon to Guy's Hospital;* 18, *St. Helen's Place.*

C. M. Kind, M.D. 5, *West Street, Finsbury Circus.*

James Laird, M.D. *Consulting Physician to the Public Dispensary.*

William Lambe, M.D. *Physician to the General Dispensary;* 2, *King's Road, Bedford Row.*

Edmund Lambert, M.D. *Salisbury.*

Richard Laming, Esq. 89, *Bishopsgate Street Within.*

George Langstaff, Esq. 2, *New Basinghall Street.*

William Lawrence, Esq. F.R.S. *Surgeon to St. Bartholomew's Hospital, and to Bridewell and Bethlem Hospitals;* 18, *Whitehall Place.*

G. E. Lawrence, Esq.

William Elford Leach, M.D. F.R.S. and F.L.S.

John G. Leath, M.D.

John Joseph Ledsam, Esq. *Birmingham.*

Robert Lee, M.D. *Physician Accoucheur to the British Lying-in Hospital, Brownlow Street;* 2, *Upper John Street, Golden Square.*

Henry Lee, M.D. *Hackney.*

John Lind, M.D.

Robert Lloyd, M.D.

Eusebius Arthur Lloyd, Esq. SECRETARY, *Assistant Surgeon to St. Bartholomew's Hospital, and Surgeon to Christ's Hospital;* 3, *Frederick's Place, Old Jewry.*

J. G. Locher, M.C.D. *Town Physician of Zurich.*

Charles Locock, M.D. *Physician to the Westminster Lying-in Hospital, and Lecturer on Midwifery at St. Thomas's Hospital;* 69, *Berners Street.*

Peter Luard, M.D. *Warwick.*

James Macartney, M.D. F.R.S. M.R.I.A. *Professor of Anatomy in Trinity College, Dublin.*

Sir Patrick Macgregor, Bart. *Serjeant-Surgeon to the King, Surgeon to the Royal Military Asylum at Chelsea, and Senior Surgeon to the Lock Hospital; Saville Row.*

Sir James Macgrigor, M.D. F.R.S. L. and Ed. *Physician Extraordinary to the King, and Director General of the Medical Department of the Army; Camden Hill, Kensington.*

George Macilwain, Esq. *Surgeon to the Finsbury Dispensary;* 14, *Ely Place, Holborn.*

William Mackenzie, Esq. *Glasgow.*

Richard Mackintosh, M.D.

Thomas Mac Whirter, M.D. *Newcastle-upon-Tyne.*

William H. Mair, M.B. 39, *Duke Street, Piccadilly.*

Wentworth Malim, Esq. 5, *Lincoln's Inn Fields.*

Henry Marsh, M.D. *Dublin.*

John Massen, Esq. *Stafford.*

Charles Maul, Esq. *Southampton.*

J. P. Maunoir, *Professor of Surgery at Geneva.*

Herbert Mayo, Esq. F.R.S. *Lecturer on Anatomy, and Surgeon to the Middlesex Hospital;* 19, *George Street, Hanover Square.*

John Medhurst, Esq. *Hurstbourne, Tarrant.*

Samuel Merriman, M.D. F.L.S. *Physician-Accoucheur to the Middlesex Hospital, and Consulting Physician-Accoucheur to the Westminster General Dispensary;* 34, *Lower Brook Street, Grosvenor Square.*

Augustus Meyer, M.D. *St. Petersburgh.*

Edward Middleton, M.D. *Southampton.*

Patrick Miller, M.D. F.R.S. Ed. *Physician to the Devon and Exeter Hospitals, and to the Lunatic Asylum, Exeter.*

William Money, Esq. *Surgeon to the Asylum for the Recovery of Health;* 3, *Hanover Street.*

Joseph Moore, M.D. *Lincoln's Inn Fields.*

Michael Morrah, Esq. *Worthing.*

Arthur Mower, M.D. 29, *St. James's Place.*

George Frederick Mühry, M.D. *Physician to his Majesty; Hanover.*

John Murray, Esq. *Surgeon to the Forces; Cape of Good Hope.*

James Muttlebury, M.D. F.R.S. Ed. *Inspector of Hospitals; Bath.*

Thomas Nelson, M.D. 47, *Berners Street, Oxford Street.*

Whitlock Nicholl, M.D. *Burlington Street.*

Thomas Nixon, Esq. *Surgeon-Major to the First Regiment of Foot Guards.*

George Norman, Esq. *Surgeon to the Casualty Hospital and Puerperal Charity; Bath.*

Richard Ogle, Esq. 96, *Great Russel Street, Bloomsbury.*

James Adey Ogle, M.D. *Aldrichian Professor of Medicine; Oxford.*

Benjamin Fonseca Outram, M.D. *Physician to the Marylebone Dispensary;* 1, *Hanover Square.*

Robert Paley, M.D. *Halifax.*

John Ranicar Park, M.D.

Richard Partridge, Esq.

Granville Sharp Pattison, Esq. *Professor of Anatomy in the London University;* 16, *Pall Mall.*

Richard Pearson, M.D. F.A.S.

William Pearson, Esq. F.R.S. *Clapham.*

John Pryor Peregrine, Esq. 3, *Halfmoon Street, May Fair.*

John George Perry, Esq. *Great James Street, Bedford Row.*

Edward Phillips, M.D. *Physician to the County Hospital; Winchester.*

William Pitman, Esq. *Andover.*

Samuel Plumbe, Esq. *Surgeon to the Royal Infirmary for Sick Children;* 65, *Great Russel Street.*

James Powell, Esq. 16, *Great Coram Street.*

William Prout, M.D. F.R.S. 40, *Sackville Street.*

William Pym, M.D. *Deputy-Inspector of Hospitals.*

Daniel Quarrier, M.D. *Surgeon to the Marine Artillery, Chatham.*

John Ramsay, M.D. *Physician to the Infirmary at Newcastle.*

John Atkinson Ransome, Esq. *Surgeon to the Infirmary, Dispensary, Lunatic Asylum, and House of Recovery, at Manchester.*

Henry Reeder, M.D. *Ridge House, Chipping Sodbury, Gloucestershire.*

John Ridout, Esq. 4, *Crescent, Bridge Street, Blackfriars.*

John Robb, M.D. *Deputy-Inspector of Hospitals.*

Charles Julius Roberts, M.D. *Physician to the South London Dis-*

pensary, and to the Seaman's Hospital; 30, *New Bridge Street.*

Benjamin Robinson, M.D. *Physician to the London Hospital, and to the Eastern Dispensary;* 28, *New Broad Street.*

Peter M. Roget, M.D. Sec. R.S. TREASURER: *Consulting Physician to the Queen Charlotte's Lying-in Hospital;* 39, *Bernard Street, Russell Square.*

Henry S. Roots, M.D. *Assistant-Physician to St. Thomas's Hospital; Physician to the Public Dispensary, and to the St. Pancras Infirmary;* 84, *Guilford Street.*

Thomas Rose, Esq. A.M. VICE-PRESIDENT: *Surgeon to St. George's Hospital, and to the St. James's Infirmary;* 11, *Park Place, St. James's Street.*

Griffith Rowlands, Esq. *Chester.*

Thomas Salter, Esq. F.L.S. *Poole, Dorsetshire.*

Demetrius Schinas, M.D.

Page Nicol Scott, Esq. *Norwich.*

Charles Scudamore, M.D. 6, *Wimpole Street.*

Edward J. Seymour, M.D. SECRETARY: *Physician to the Asylum for the Recovery of Health;* 23, *George Street, Hanover Square.*

Thomas Shortt, M.D. *Physician to the Forces; Edinburgh.*

Charles Shuter, Esq. 48, *Guildford Street.*

John Sims, M.D. F.R.S. & L.S. *Consulting Physician to the Lying-in Charity; Dorking.*

John Sims, M.D. 37, *Cavendish Square.*

Charles Skene, M.D. *Professor of Anatomy and Surgery, Marischall College, Aberdeen.*

George Skene, Esq. *Demonstrator of Anatomy;* 6, *Jermyn Street, St. James's Street.*

Joseph Skey, M.D. *Physician to the Forces; Chatham.*

Frederic C. Skey, Esq. *Assistant Surgeon and Demonstrator of Anatomy at St. Bartholomew's Hospital, and Surgeon to the Northern Dispensary;* 33, *Southampton Row, Russel Square.*

Ashby Smith, M.D. 12, *Bloomsbury Square.*

Noel Thomas Smith, M.D. *Newcastle.*

Robert Smith, M.D. *Maidstone.*

Southwood Smith, M.D. *Physician to the Fever Hospital and to the Eastern Dispensary;* 15, *Trinity Square.*

George Snowden, Esq. *Ramsgate.*

John Smith Soden, Esq. *Surgeon to the City Infirmary and Dispensary, to the Eye Infirmary, and to the Penitentiary and Lock Hospital; Bath.*

William Somerville, M.D. F.R.S. L. & Ed. *Physician to the Royal Hospital, Chelsea; and Principal Inspector of Hospitals; Chelsea.*

James C. Somerville, M.D. 22, *Prince's Street, Hanover Square.*

John Flint South, Esq. 12, *St. Thomas's Street, Borough.*

Edward Spry, Esq. *New North Street.*

John Gaspar Spurzheim, M.D.

Christopher Stanger, M.D. *Physician to the Foundling Hospital, and Gresham Professor of Medicine;* 1, *Lamb's Conduit Place.*

Edward Stanley, Esq. *Assistant-Surgeon and Lecturer on Anatomy at St. Bartholomew's Hospital;* 19, *Lincoln's Inn Fields.*

Charles Thomas Stephenson, M.D. 1, *Moore Place, Lambeth.*

Thomas A. Stone, Esq. 7, *Clifford Street.*

William Stroud, M.D. 5, *Wilmington Square.*

Alexander Robert Sutherland, M.D. *Physician to St. Luke's Hospital;* 1, *Parliament Street.*

John Sweatman, Esq. *Surgeon Accoucheur to the St. George's and St. James's Dispensary;* 68, *Berner's Street.*

John C. Taunton, Esq. *Surgeon to the City of London Truss Society;* 51, *Hatton Garden.*

Frederick Thackeray, M.D. *Physician to Addenbrook's Hospital, Cambridge.*

Honoratus Leigh Thomas, Esq. F.R.S. 12, *Leicester Place.*

Charles Thomas, M.D. *Devonport.*

John Thomson, M.D. F.R.S. Ed. *Surgeon to the Forces; Edinburgh.*

Anthony Todd Thomson, M.D. *Professor of Materia Medica and Pharmacy in the London University;* 3, *Hinde Street, Manchester Square.*

John Thomson, Esq. 58, *Hermitage Place, St. John's Street Road.*

Tindall Thornton, M.D. *India.*

Sir Matthew John Tierney, Bart. *Physician to the King;* 46, *Dover Street.*

James Torrie, M.D. *Aberdeen.*

Benjamin Travers, Esq. F.R.S. President: *Surgeon to St. Thomas's Hospital;* 12, *Bruton Street.*

William Travis, Esq. *Scarborough.*

William Tudor, Esq. *Bath.*

Martin Tupper, Esq. 5, *New Burlington Street.*

Alexander Tweedie, M.D. *Physician to the London Fever Hospital, and to the Northern Dispensary;* 40, *Ely Place, Holborn.*

Frederick Tyrrell, Esq. *Surgeon to St. Thomas's Hospital, and to the London Infirmary for Diseases of the Eye;* 17, *New Bridge Street.*

Barnard Van Oven, Esq. *Consulting Surgeon to the Charity for delivering Jewish Lying-in Women; Fenchurch Buildings.*

Bowyer Vaux, Esq. *Surgeon to the Infirmary at Birmingham.*

John P. Vincent, Esq. *Surgeon to St. Bartholomew's Hospital;* 16, *Lincoln's Inn Fields.*

James Vose, M.D. *Liverpool.*

Benedetto Vulpes, M.D. *Physician to the Hospital of Aversa, and to the Hospital of Incurables, Naples.*

Nathaniel Vye, Esq. *Ilfracombe.*

William Wagner, M.D. *Berlin.*

Thomas Walker, M.D. *Physician to the Forces, and to the Embassy at St. Petersburgh.*

John Warburton, M.D. 5, *Clifford Street.*

Tilleard Ward, Esq. 48, *Berner's Street.*

Martin Ware, Esq. 22, *Bloomsbury Square.*

John Ware, Esq. *Bridge Street, Blackfriars.*

Charles Bruce Warner, Esq. *Cirencester.*

R. Watts, M.D. *Cranbrook.*

George Hume Weatherhead, M.D.

Charles Webb, Esq. *Oxford.*

John Norman Weekes, Esq. *St. Bartholomew's Hospital.*

Richard Welbank, Esq. 102, *Chancery Lane.*

Sir Augustus West, *Deputy Inspector of Hospitals to the Portuguese Forces; Lisbon.*

John Whatley, M.D. 49, *Hunter Street, Brunswick Square.*

William Wickham, Esq. *Surgeon to the Winchester Hospital.*

Arthur Ladbroke Wigan, Esq. 1, *Ulster Place.*

Robert Williams, M.D. *Pnysician to St. Thomas's Hospital;* 39, *Bedford Place.*

Isaac Wilson, M.D. *Domestic Physician to the Duchess of Kent; Haslar Hospital, Gosport.*

Charles Wingfield, Esq. *Oxford.*

Thomas A. Wise, Esq. *India.*

Kinder Wood, Esq. *Manchester.*

William Wright, Esq. 3, *Grenville Street, Brunswick Square.*

Edward Wright, M.D. *Resident Apothecary and Superintendant of Bethlem Hospital.*

John Yelloly, M.D. F.R.S. *Physician to the Duke of Gloucester, and to the Norfolk and Norwich Hospital; Carrow Abbey, Norwich.*

George William Young, Esq.

Thomas Young, M.D. F.R.S. & L.S. *Physician to St. George's Hospital; Park Crescent, Portland Place.*

Samuel Young, Esq.

HONORARY MEMBERS.

Sir Humphrey Davy, Bart. L.L.D. F.R.S. *Grosvenor Street.*

Charles Hatchett, Esq. F.R.S. *Hammersmith.*

William Hyde Wollaston, M.D. F.R.S. *Buckingham Street.*

FOREIGN HONORARY MEMBERS.

Paolo Assalini, M.D. *Professor of Surgery, and Chief Surgeon to the Military Hospital at Milan, &c.*

Jacob Berzelius, M.D. F.R.S. *Professor of Chemistry in the University of Stockholm.*

John Frederick Blumenbach, M.D. F.R.S. *Professor of Medicine in the University of Gottingen.*

George Cuvier, F.R.S. *Perpetual Secretary to the Royal Institute of France, Paris.*

David Hosack, M.D. F.L.S. *Professor of Physic in the University of New York.*

Frederick Louis Kreysig, M.D. *Physician to the King of Saxony, and Professor of Medicine at Dresden.*

John Frederick Meckel, M.D. *Professor of Anatomy, Physiology, Zoology, and Surgery, and Dean of the Medical Faculty at the University of Halle.*

Anthony Portal, M.D. *Professor of Medicine in the College of France, and of Anatomy in the Museum of Natural History; Paris.*

Antonio Scarpa, F.R.S. *Professor of Anatomy in the University of Pavia.*

S. Th. Soemmerring, M.D. *Professor of Anatomy at Munich.*

CONTENTS

OF

VOL. XIV.—PART I.

Page

I. Observations on the Nature and Treatment of Erysipelas, illustrated by Cases, by W. Lawrence, Esq. F.R.S. &c. Surgeon to St. Bartholomew's Hospital.... 1

Cases of simple Erysipelas 81

——— Erysipelas treated by incision..... 134

——— Inflammation of the Cellular Structure 198

II. On the Treatment of Erysipelas by numerous Punctures in the affected Part, by R. Dobson, M.D. Surgeon to the Royal Hospital, Greenwich. In a letter to W. Lawrence, Esq. F.R.S. 206

III. Case of Erysipelas, with some Remarks, by A. Copland Hutchison, Esq. F.R.S. L. and E. &c. Late Surgeon to the Royal Naval Hospital at Deal, Surgeon to H.R.H. the Lord High Admiral, and Senior Surgeon to the Westminster General Dispensary..... 213

IV. Cases of Tumours in the Abdomen, arising from Organic Disease of the Stomach, with Remarks; by Edward J. Seymour, M.D. (Secretary) Fellow of the Royal College of Physicians, London, and Physician to the Asylum for Recovery of Health..... 222

Page

V. Observations on Depositions of Pus and Lymph occuring in the Lungs and other Viscera, after Injuries of different Parts of the Body; by Thomas Rose, Esq. M.A. Late of Balliol College, Oxford, Surgeon to St. George's Hospital 251

VI. Observations on a Peculiar Inflammatory Disease of the Eye, by W. Wallace, Esq. M.R.I.A. &c. Communicated by the President 286

ERRATA.

Page 206. line 7. After M.D. for "Physician" read "Surgeon."

208. First Prescription should be as follows:

℞ Mistur. Camphor. f℥iij
Liq. Ammon. Acet. f℥iij
Tincturæ Rhœi āā f℥iss M.
Sumat cochlearia duo larga 3tiâ vel 4tâ quâque horâ.

Second Prescription.

℞ Liq. Ammon. Acet. Oss.
Sp. Camphor. ℥j
Aquæ puræ ℥vij. M.

OBSERVATIONS

ON

THE NATURE AND TREATMENT

OF

ERYSIPELAS,

ILLUSTRATED BY CASES;

By W. LAWRENCE,

SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, ETC. ETC.

Read Oct. 9th and 23d, 1827.

ALTHOUGH erysipelas, in its various forms, is a disease of frequent occurrence, and comes daily under the observation of the physician and surgeon, great difference of opinion still prevails respecting its nature and management. Regarding it as an affection essentially inflammatory, some adopt the antiphlogistic plan, including general and local bleeding; while others, conceiving that the part, the constitution, or both, are in a state of debility, endeavour to remove this by the free use of stimulants and tonics, more especially by bark, ammonia, and wine. The former appears to me the correct view and practice; I accordingly consider the latter notion completely erroneous, and the treatment founded on it, not only inap-

propriate, but injurious. Together with my opinions respecting erysipelas generally, I submit to the consideration of the Society some of the facts, from which those opinions have been deduced: I also offer some remarks, illustrated by cases, on the treatment of phlegmonous erysipelas by incisions, having learned by repeated trials to estimate highly the efficacy and value of the practice.

By erysipelas I understand inflammation of the skin, either alone or in conjunction with that of the subjacent adipous and cellular tissue. Like other inflammations it varies in degree. When it affects the surface of the skin, which is red, not sensibly swelled, soft, and without vesication, it is called *erythema*. *Simple erysipelas* is a more violent cutaneous inflammation, attended with effusion into the cellular substance, and generally with vesication; *phlegmonous erysipelas* is the highest degree of the affection, involving the cellular and adipous membrane as well as the skin, and causing suppuration and mortification of the former.

Description of the Affection. Simple Erysipelas.

In *simple erysipelas* the skin is preternaturally red and shining, having a light or rosy tint in the early stage and slighter cases of the affection; whence in some languages it has received the popular appellation of the *rose;* while in other in-

stances it is of a bright scarlet, or even a deep and livid red. The colour disappears on pressure, returning as soon as the pressure is removed. If the skin alone be affected, there is hardly any perceptible swelling, and no tension; yet some difference is perceived between the sound and the inflamed part by passing the finger over it. Erysipelas, however, is seldom confined to the skin*, except in the slightest cases; effusion soon takes place into the cellular texture, causing a soft swelling; and this may be considerable, together with much tension and a shining surface, when a large part of the body, or an entire limb, is involved. The inflamed part is hot and painful; at first a stinging or itching is felt, which soon becomes a sharp smarting and burning sensation, with acute pain on pressure. The pain is not so intense and unremitting as in phlegmon, nor is it attended with throbbing. This kind of inflammation often ends by resolution; the redness and other symptoms disappearing, and the skin recovering its natural state, with or without desquamation of the cuticle. Frequently serous effusion takes place from the inflamed surface, elevating the cuticle into smaller or larger vesicles, or into bullæ like those pro-

* Callisen asserts the contrary; "Telam autem cellulosam non invadit Erysipelas, nisi cum phlegmone nuptum."—Syst. Chir. Hod. Vol. I. § 499. Yet the first character which he assigns to erysipelas generally is "tumor diffusus partis cujusdam"; an appearance which is caused by effusion into the cellular texture consequent on inflammation.

duced by blisters, or raising it by a soft yellow jelly-like deposit, which remains slightly adherent to both the cutis and cuticle, and exactly resembles the effect often produced by the common blistering plaster. The contents of the vesicles or bullæ are transparent, sometimes nearly colourless, but more commonly yellowish; sometimes they consist of a thin pus; or they may exhibit a bloody or livid discolouration (phlyctænæ). The fluid loses its clearness, becoming thicker, opake, and whitish or yellowish. The cuticle gives way, the fluid escapes, and incrustations form, which soon fall off, leaving the skin sound; or they may lead to superficial ulcerations. Erysipelas sometimes produces gangrene, but this is a comparatively rare occurrence. So long as this inflammation is confined to the skin, it does not produce suppuration *; and the affection of the cellular structure is too slight for that termination

* "Erysipelas may end in suppuration; but this hardly ever happens in the genuine unmixed form of the complaint." S. G. Vogel's Handbuch; Ed. 3. Vol. III. p. 338. Among the characters which Callisen assigns to that tumefaction of a part which constitutes erysipelas, is "nunquam in veram suppurationem abiens." Syst. Chir. Hod. Vol. I. p. 240. "In suppurationem nonnisi tunc transit, dum phlogosis ad subjectum textum cellularem protenditur, vel ad phlegmones potentiam exaltatur." Hildenbrand, Inst. Pract. Med. t. 3. p. 594. Speaking of spontaneous erysipelas, Rust says, "It never causes suppuration; nor does mortification take place except where the constitution is bad, or a concurrence of other unfavourable circumstances is observed." Magazin, Vol. VIII. p. 504.

in most cases of simple erysipelas. It may, however, become more severe at one point; and thus we occasionally see the formation of abscess under the skin towards the decline, or after the disappearance of the general erysipelatous redness. (See Cases 12 and 19.)

This inflammation generally attacks a considerable surface of the skin, the inflamed part being irregularly circumscribed by a defined line. It spreads quickly to the neighbouring skin, declining and disappearing in the part first affected; and this alternation is repeated until the whole surface of the head and face, of a limb, or of the trunk has been successively inflamed. (See Cases 2. 6. 10, 11. 14. 18, 19.) Thus we commonly see the various stages of erysipelas existing together at the same time in different parts of the skin; the portion last affected is red and swelled; another part is vesicated, while others exhibit incrustation and desquamation. Sometimes it leaves entirely the part first affected, to appear in a distant situation. Its origin, development, and complete termination seldom take place in one and the same spot. (See Cases 7. 12, 13.) The neighbouring absorbent glands are frequently inflamed, and red streaks are sometimes seen leading towards them.

The local symptoms, above described, are preceded and accompanied by fever, which varies

in its character according to the constitution, age, and general state of health. Shivering followed by increased heat, general uneasiness, lassitude, head-ach, loss of appetite, nausea, white or foul tongue, and constipation usher in a severe attack, and the general disturbance is of a decidedly inflammatory character in the young, strong, and those of full habit. Blood drawn from a vein exhibits in a greater or less degree the inflammatory character. This circumstance was noticed by Sydenham *, Cullen †, and Vogel ‡, and is particularly mentioned in several of the cases annexed to this paper. (See Cases 2, 3. 5. 7. 10, 11, 12, 13. 17.) It has nevertheless been denied by Callisen ‖. Often, particularly when the head is the seat of erysipelas, the sensorium is principally affected, and the symptoms are of the kind called nervous, such as pain and oppression of the head, sleepiness, coma or delirium. The tongue in such cases becomes dry and brown; but this state of the organ is often owing principally to the circumstance of the patient breathing entirely through the mouth; the pulse is rapid and feeble, and there is great loss of muscular strength; in short, the symptoms at length are those called typhoid. In other cases the circulation and the nervous system are not much

* Obs. Med. Sect. VI. cap. 6.
† First Lines, § 707.
‡ Handbuch, Vol. III. p. 348.
‖ Syst. Chir. Hod. Vol. I. p. 243.

affected; but there is pain in the epigastric region, foul tongue with bad taste in the mouth, nausea, and constipation; that is, so many indications of disordered stomach and intestinal canal, to which, as its cause, the local affection must be referred.

It is not to be expected that an affection, of which the obvious symptoms during life are merely vascular distension and redness with swelling, will produce much change in the affected parts recognizable after death. In simple erysipelas the red colour disappears as soon as the circulation stops. The cuticle, if not already separated by vesication, soon loses its adhesion to the cutis, and the surface of the latter, in an advanced stage of the affection, has a livid appearance. The texture of the skin presenting a reddish or brownish tint, is loaded with serum, and softer than in the natural state. Serous effusion is found in the cellular tissue; and its vessels, as well as those of the skin, are distended. Sometimes we unexpectedly discover suppuration where the case has appeared during life to be simple erysipelas, and no symptoms indicating formation of matter have been noticed.

A patient, 57 years old, was admitted under my care at St. Bartholomew's, for an extensive laceration and detachment of the scalp, caused by falling down a flight of cellar steps. From the 3d of June to the 14th he was bled eight times

from the arm; all symptoms of excitement had ceased on the 15th, when the head was easy, the pulse quiet, and his state favourable in all other respects. On the 18th erysipelas appeared in the arm and neighbouring part of the forearm, the affected parts being tumid, bright red, and very painful. He died on the 21st, the erysipelas not having extended beyond the parts first affected. He had been bled three times in the arm. On examination after death, the veins were found perfectly healthy. The skin and adipous membrane of the inflamed part were pale and natural; a large effusion of yellow and somewhat thin, but good pus was found in the cellular structure connecting the adipous membrane to the muscles along the whole back and inner part of the arm. The matter did not form a distinct collection, but two or three tablespoonfuls were found in one part, and it was thence diffused through the cellular substance, without any definite boundary, and seemed to have gravitated into the place where it was found, in consequence of the position of the limb.

Phlegmonous Erysipelas.

Phlegmonous * differs from simple erysipelas

* The expression phlegmonous erysipelas is employed in two senses, which are somewhat different. The most modern authors denote by it the conjunction of an inflammation of the skin with a serious inflammatory affection of the cellular texture. (See Boyer, Traité des Mal. Chir. T. II. p. 7. Rayer, Tr. des

merely in the higher degree and deeper extent of the inflammation, which not only occupies the whole thickness of the skin and subjacent adipous and cellular tissue, but soon proceeds in the latter to suppuration and sloughing, the skin itself being often involved secondarily in the mortification. Both the local and general symptoms are more strongly marked, and hence more serious effects are produced than in simple erysipelas. Rigors, feverishness, and disorder of the stomach precede the inflammation of the skin, which then shows itself from the first in a violent form; or, the local complaint begins mildly, without much general disturbance, and gradually assumes a more serious

Mal. de la Peau, T. I. p. 112.) But it is also applied to those cases, in which the inflammatory symptoms are strongly marked, without any reference to the consideration, whether the local affection is confined to the skin, or extends deeper. In this sense it is employed by Cullen (First Lines, Part I. Book III. Chap. 6.), by Willan, and by Bateman, who also calls it acute erysipelas. The degree of disorder, which the circulating and nervous systems experience in erysipelas, does not depend merely on the confinement of the inflammation to the skin, or its extension to the cellular texture; the seat of the disease is an important circumstance in this respect. Hence the most serious symptoms are observed when the head is affected, although this comes in most cases under the head of simple erysipelas. The authors cited above describe this as phlegmonous erysipelas. We are conducted from the slightest form of erythema to the severest phlegmonous erysipelas by numerous intermediate steps, which constitute an insensible gradation: the two ends of the series are widely different, but the middle boundary must be nearly arbitrary.

character. The redness is deeper than in simple erysipelas, often with a brownish or dark livid tint; the discolouration is often irregular, giving to the part a marbled appearance; the tumefaction is more considerable, the whole depth of the adipous and cellular textures being loaded with effusion, so that an arm or leg appears of twice the natural size; the sensation of heat and pain, at first slight, is aggravated to a very severe degree, and may be accompanied with throbbing. The swollen part at first yields slightly to the pressure of the finger, but subsequently becomes tense and firm. Vesications form on the surface, often minute and miliary, with purulent contents (see Cases 27, 28, 29); frequently however the skin does not vesicate. (See Cases 22, 23, 24. 26.) Suppuration and sloughing of the cellular membrane soon come on, the skin becoming livid and covered with phlyctænæ (see Case 36), and the febrile symptoms are aggravated. These changes are not attended with increased swelling, elevation, and pointing, as in phlegmon; on the contrary, there is rather a diminution of tension, a subsidence, and a feel of softness in the part. At first the cellular texture contains a whey-like or whitish serum (Cases 22 and 26), which I have sometimes seen in the eyelids almost of milky whiteness. (See Case 21.) The fluid gradually becomes yellow and purulent, and we often find it presenting all the characters of good pus, and very thick. The serum is diffused through the

cells at an early period, and a mixture of serum and pus often fills a considerable portion of the cellular texture without any distinct boundary. (See Case 36.) Frequently matter is deposited in small separate portions, forming a kind of little abscesses, which often run irregularly in the cellular texture. Such small collections are sometimes found where lividity or phlyctænæ have not preceded, and where no external changes nor any aggravation of other symptoms have announced suppuration. During this process of suppuration the cellular texture turns gray, yellowish or tawny (Case 28), and sometimes appears like a dirty, spongy substance filled with turbid fluid (Cases 22 and 29); then losing its vitality altogether, it is converted into more or less considerable fibrous shreds, of various size and figure, which come away soaked with matter like a sponge. The integuments over a large slough of this kind, being deprived of their vascular supply, become livid, and often lose their vitality *. The suppurating and sloughing processes go on to a great extent

* Baron Dupuytren, who has particularly noticed this kind of secondary gangrene in his clinical lectures, explains the reason why it does not occur in the head. The seat of phlegmonous erysipelas, or, as he calls it, *diffused phlegmon*, in that situation, is the cellular texture between the fronto-occipital aponeurosis and the pericranium. The sloughing of that texture does not affect the nutrient vessels of the scalp, which lie exteriorly to it, immediately under and almost in the integument itself.

when an entire limb is affected, sometimes completely detaching the skin, and often separating it through a large space; occasionally penetrating deeper, passing between the muscles, causing inflammation of them, suppuration between them, and often sloughing of the tendons. When the substance of a limb is thus generally inflamed, the joints situated in the affected part do not escape. Inflammation of the synovial membrane, effusion of matter into the joint, and ulceration of the cartilages take place *. An inflammation of such extent and violence cannot fail to excite the most serious sympathetic affections, among which may be mentioned disturbance of the nervous system, causing symptoms of typhoid character, inflammation of the lungs or pleura, of the intestinal mucous membrane, producing diarrhœa, or of the peritoneum, and inflammation or suppuration of other organs. The combination of the primary and secondary affections is speedily fatal †. If,

* In a case observed by Mr. C. Hutchison the cartilages of the femur and tibia were absorbed; at least there was a complete anchylosis of the knee. Practical Observations, 2d edit. p. 115. Pus in the ankle-joint; the articular cartilages absorbed, and the tibia carious. Bibl. Med. Sept. 1827. p. 331. In another case the elbow and shoulder-joints were inflamed, and the articular cartilages ulcerated. Ibid. p. 333.

† The mortality under this affection has sometimes been truly alarming. Of fifteen cases which occurred in Plymouth Dock-Yard, during August and September 1824, twelve ended fatally. In the bodies of those who were examined after death, the following morbid appearances were found; viz. sero-puru-

however, the patient should recover after tedious suppurations and discharge of sloughs, the parts, which have been inflamed, are so changed in structure, and skin, fascia, muscles, tendons, and bones are so unnaturally agglutinated and fixed, after the extensive destruction of the connecting cellular texture, that the motions of the part are permanently and seriously impaired.

The affected part, which is at first firm and almost brawny to the feel, becomes softer when diffused suppuration and matter mixed with sloughs are under the skin. Hence examination communicates a peculiar kind of sensation, compared by Mr. Pearson * to that "which is excited by a quagmire or morass", and which others have denominated "boggy". I do not understand what kind of feeling a quagmire, morass, or bog would

lent effusion into the thorax, with inflammation of the lungs; similar effusion into the abdomen, inflammation of the mucous membrane of the ilium and colon, and of the liver. In one case there was an abscess with a pint of pus round the kidney; and in another, the kidney was converted into a fluid like thick cream. The head does not seem to have been examined in any case.—Dr. Butter's Remarks on Irritative Fever, &c. Devonport, 1825. Sero-purulent effusion into the chest, inflammation of the lung, and of the mucous membrane of the ilium and colon, were the appearances observed in some fatal cases described by Messrs. Moulin and Guibert in the Nouvelle Bibl. Med. Sept. 1827.

* Principles of Surgery, Ch. X.

communicate to the hand; nor do I think that such comparisons would elucidate the matter, if it were obscure, which it is not.

Phlegmonous erysipelas spreads, like the simple species, to new parts successively; we notice a visible advance of the redness and swelling every day, and thus the affection is in different stages in the different portions of the inflamed part. The absorbent glands are generally more or less swollen, and the absorbent vessels are frequently inflamed in the commencement of the affection.

Seat and Nature of the Affection and Diagnosis.

The practice of making incisions into the inflamed textures enables us to see that the vessels are enlarged and more numerous in the early part of the disease, and that the cellular texture is loaded with a yellowish serum. (Cases 23. 26. 28.) Portions of that texture then assume a light yellow, or a dirty colour, which is the precursor of mortification. (Cases 22. 26. 29.) The actual occurrence of suppuration and sloughing must of course be immediately observable. The matter often extends irregularly or is diffused in the cells of the part. Thus the skin and the cellular substance are the seat of this inflammation, which, in examination after death, is generally found not to extend beneath the fascia. I have observed, as

Mr. Copland Hutchison remarks*, that the cellular texture connecting the adipous membrane to the fascia or muscles, suppurates and sloughs more readily than the adipous substance itself. Mortification frequently occurs in the former when the latter is still quite healthy, or at least only affected by vascular distension. Small detached depositions of matter are however commonly found in the adipous membrane, in a severe attack of the disease, and these are contained in sinuous tracks leading to some distance, as we find from the escape of matter on pressure. In the passage already quoted, Mr. Hutchison speaks of the "aponeurosis of the muscles", and the "aponeurotic expansion" as being the principal seat of the disease; and he adds that he is persuaded it is "confined chiefly to membranous parts, such as the aponeurotic expansions, skin, sheaths of tendons, muscles, &c." † If, which is doubtful, Mr. Hutchison means that the fasciæ or aponeu-

* "My own observation has afforded me convincing proofs that, in the species of the disease now under consideration [phlegmonous erysipelas] its active and destructive influence will be found more especially directed to the skin, and the reticular or condensed cellular substance forming the aponeurosis of the muscles, &c. In the genuine erysipelas phlegmonodes, pus is seldom formed in the substance of the adipous part of the tela cellulosa, exterior to the aponeurotic expansion, that is, between the membrane and the skin, its most common position is beneath these parts, and in immediate contact with the muscles." Practical Observations in Surgery, 2d edit. p. 113.

† Ibid. pp. 113, 114.

roses, properly so called, are the seat or principal seat of the disease, I cannot agree with him, having always found them unaffected in examinations after death, and seen no symptoms referrible to such an inflammation during life. They may indeed become involved in the disease, when it is violent; and they must suffer partially when it extends to the intermuscular cellular structure; but they are not primarily affected in these cases, while, in the majority of instances, they do not suffer at all.

Mr. Earle expressly says that "the disease under consideration exerts its influence principally on the subcutaneous tissue and *fascia*"*; and the same opinion is held by Mr. Arnott, who calls traumatic erysipelas, "inflammation of the skin, cellular substance, or fasciæ from local injury"†. When phlegmonous erysipelas, attacking the scalp, proceeds to suppuration and sloughing, these changes do not occur in the aponeurosis of the fronto-occipitalis muscle, but in the loose cellular substance connecting it to the pericranium, which becomes one general deposit of matter mixed with large ragged cellular sloughs. The abundant cellular membrane of the eyelids, which, like that under the fronto-occipital aponeurosis, is completely free from fat, is another frequent seat of suppuration in erysipelas. In both these cases, as

* London Medical and Physical Journal, Vol. LVII. p. 1.

† Ibid. p. 199. See also pp. 204. 207. and 211.

well as in the scrotum and penis, it is clear that cellular and not aponeurotic structure is the seat of this inflammation. The cases of diffuse inflammation of the cellular texture, related by Dr. Duncan, jun., are analogous to those of phlegmonous erysipelas, so far as the changes in the cellular texture go. He says "that no particular notice was, in any of our dissections, paid to the state of the fasciæ, but at least there was no such change in it any where as to attract our attention."* He mentions an instance, where the tendinous septa between the ribs remained unaffected, when the muscular substance and all other textures had disappeared.

A consideration of the origin, development and effects of erysipelas, of all its phenomena, whether local or general, leads us irresistibly to the conclusion that the nature of the affection is inflammatory. In its four leading characters of redness, swelling, heat, and pain, and in its effects of effusion, suppuration, and sloughing, it agrees with what is called common or phlegmonous inflammation; while the general disturbance, preceding and accompanying the local affection, is often exactly alike in the two cases. Erysipelas then is merely a particular modification of cutaneous or cutaneous and cellular inflammation. If we were

* Transactions of the Medico-Chirurgical Society of Edinburgh. Vol. I. p. 612.

to class these according to their natural affinities, we should place erysipelas between the exanthemata and phlegmon. It is less diffused than the former, not so circumscribed as the latter. The exanthemata are confined to the skin; erysipelas affects both skin and cellular structure; while phlegmon has its original seat in the latter, the skin being secondarily involved.

The difference between erysipelas and phlegmon, however, is not merely in the original seat or degree of the disturbance; there is also a difference in kind. We may indeed say generally that phlegmon is a more violent inflammation than erysipelas, but sloughing of the cellular substance is more frequent in the latter than in the former. The most striking and important distinction between the two affections is that inflammation is confined to one spot in phlegmon, and is distinctly circumscribed in its seat, while it is diffused in erysipelas, and spreads without limit. This difference seems to depend on the adhesive character of the inflammatory process in the former; the substance called coagulating, coagulable, or organizable lymph, effused around the inflamed part, forms a boundary between it and the sound portion, which is altogether wanting in erysipelas. In the latter the effusion is serous, hence, when matter is formed, it is not confined to one spot, but becomes extensively diffused in the cellular tissue. We cannot at present explain the cause of this dif-

ference, that is, we do not know how it happens that coagulating lymph is poured out in the one case, and serum in the other. We are equally ignorant of the essential nature in many other modifications of inflammation, which are yet obviously distinct. No one could overlook the differences between inflammation of the finger from a wound, that of whitlow, of chilblain, of erysipelas, of gout; yet who could explain the differences of vascular action which cause these distinctions?

We must therefore admit, what even superficial observation will teach, that erysipelas is a peculiar modification of inflammation in the skin and cellular texture. I can however by no means agree with those who regard it as a distinct species of inflammation, and as capable, in that character, of affecting various parts of the body as well as the skin. Some writers have referred to erysipelas certain inflammations of the conjunctiva, mouth, and fauces, of the respiratory and alimentary mucous surfaces, of the serous membranes in the head, chest and abdomen, and of the brain, abdominal and thoracic viscera*. The

* "*Internum* quoque et ad viscerum superficiem residens haberi *erysipelas*, a Veteribus creditum, a Recentioribus verò in dubium vocatum est. Novimus tamen, non modo in viventibus, encephalitidem, otitidem, peripneumoniam, enteritidem, singulasque inflammationum species, comparente ad externam corporis superficiem erysipelate protinus disparuisse;—hoc ipsum vero ab externis genitalibus, sine interruptione phlogosis, per vaginam ad uterum; a facie ad fauces, asperam arte-

proof of such an opinion would consist in shewing that the same peculiarities, which distinguish erysipelas from other inflammations of the skin, are found in certain inflammations of the parts just

riam, pulmones cæterasque ad partes internas manifeste penetrasse;—sed etiam in cadaveribus ad urethram, vesicam, vaginam, uterum, ovaria, intestina, ventriculum, hepar; in pectore ad pleuram, bronchia, pericardium, cor ipsum, ac vasa majora; in calvaria ad meninges, ad cerebrum ipsum, frequentius certe erysipelatosa, quam phlegmonosa occurrit inflammatio. Ex mammarum schirro, dexterrimâ licet manu, per cultrum ablato, erysipelas in singulis fere corporis externi partibus, ac tandem lethalis peripneumonia successit: post quam pulmones undique correptos erysipelate, ex flammeo rubentes, nec duros, sed copioso sero innatantes conspeximus; ac pars plurima certe peripneumoniarum malignarum cum erysipelate pulmonum incedit; nec durus, nec cocto similis hepati ac ponderosus in cadaveribus pulmo in illis detegitur. Nullum ergo de *interni erysipelatis* frequentia dubium superesse potest; licet signa characteristica, quæ hanc potius, quam phlegmonosam affectionem ad viscera indicent: nisi ab externo et retropresso erysipelate, aut a manifestâ interni hujus mali ad externam partem non interruptâ continuatione,—ex epidemica per sectiones pathologicas confirmata morbi indole,—ex cachectica subjecti constitutione ac prona in erysipelas natura,—ac demum ex causis inflammationi veræ parum faventibus, desumatur; adduci non queant." J. P. Frank, De Curand. Homin. Morbis. lib. III. p. 28. Joseph Frank also admits the existence of internal erysipelas. Praxeos Med. Universæ Præcepta, Ed. 2. Part I. Vol. II. p. 145. Callisen enumerates the mucous membranes among the parts subject to erysipelas, but he does not attempt to describe the affection in these structures. Systema Chirurgiæ Hodiernæ, Vol. I. § 499. Dr. Weatherhead has endeavoured to prove that puerperal fever is " purely an erysipelatous affection." Essay on the Diagnosis between Erysipelas, Phlegmon, and Erythema; Appendix, p. 51.

enumerated, and that such affections may hence be distinguished from ordinary inflammations of the same organs. No attempt of this kind has been made: on the contrary, nothing can be more vague and unsatisfactory than the arguments by which Frank, in the quotation below, attempts to support his opinion. Since the distinguishing characters of erysipelas are clearly referrible to the peculiarities of the cutaneous and cellular structures in which it occurs, we could not expect to meet with the same affection in parts so differently organized as serous membranes and the viscera *. The texture of mucous membranes presents in-

* Vogel observes, that erysipelas may recede and affect the brain, lungs, liver, stomach, bowels, &c. He adds, "It is difficult to determine in what respect internal erysipelatous inflammation differs from true inflammation. When erysipelas recedes, we know the fact well; but the appearances hence arising are not different from those of true inflammation, and the treatment is the same." Handbuch der Prakt. Arzney-Wissenschaft, Ed. 3. Vol. III. p. 340.—"Quæ a nonnullis medicis adhuc conservatur erysipelatis in internum et externum partitio, rationalis nosologiæ principiis prorsus repugnat; si enim derma unicum et exclusivum erysipelatis substratum largitur, ejusque functio læsa et desquamatio essentialem characterem constituit, eo ipso existentia erysipelatis interni excluditur, quod, præclari Richteri verbis utendo, verum non ens dici potest: 'Die Rose an innern Theilen ist ein unding.' Metastaticæ phlogoses membranarum internarum, quæ post erysipelas derepente repressum enascuntur, huic quidem analogum processum phlogisticum sistunt, a respectivo tamen organi affecti textu modificantur ita, ut absente dermatis typo, etiam erysipelatis characterem amittunt." Hildenbrand, Inst. Pract. Med. tom. III. p. 604.

deed some traits of analogy to that of the skin, and there is a corresponding conformity in some of the morbid phenomena. Thus, so far as organization is concerned, we might suppose that mucous membranes would be susceptible of erysipelatous inflammation; but we see nothing that is clearly referrible to this head, either during life or in examinations after death, although these membranes and the skin exert over each other, in many cases, a powerful sympathetic influence.

An erysipelatous ophthalmia has been described, but the cases thus denominated bear a very faint resemblance to any form of cutaneous erysipelas; while in erysipelas of the face, which closes the palpebræ, the conjunctiva either does not suffer at all, or merely experiences a slight sympathetic irritation. Erysipelas of the face does not usually extend into the mouth, although it is not unfrequently preceded or accompanied by inflammation of the mucous membrane of the fauces; and those affections of the fauces which have been called erysipelatous have only one character in common with erysipelas, namely, redness. The swelling and vesications of erysipelas are not found in these inflammations, which, on the other hand, are frequently attended with ulceration, with the formation of an ash-coloured or tawny substance adhering to the surface, and with superficial sloughing; occurrences either very unusual, or not belonging at all to erysipelas. Who has ever seen the

changes that erysipelatous inflammation would produce in the mucous lining of the air-passages, of the œsophagus, stomach, or intestinal canal? As nothing like proof has been offered of such inflammation occurring in the serous membranes or the viscera, it is not necessary to refute the notion.

Mr. Earle* and Mr. Arnott† have proposed, on the contrary, to restrict the use of the term erysipelas: they would employ it to denote inflammation of the skin only, and would remove the species called phlegmonous altogether from the catalogue of erysipelatous diseases. Mr. Earle calls it "diffused cellular inflammation," an appellation that would be ambiguous, inasmuch as the adjective might denote either the seat or nature of the inflammation. Mr. Arnott observes, that "inflammation of the cellular substance" would be the proper name, the epithet "diffuse" being unnecessary. Mr. Earle states, that the inflammation of the cellular texture is the primary and principal affection, that of the skin a secondary effect dependent on the former‡. Mr. James, on the

* Observations on Diffused Cellular Inflammation, with Cases. London Med. and Phys. Journal, Vol. LVII. p. 1.

† Cases of Erysipelas, &c. Ibid. p. 193.

‡ Professor Rust has taken the same view of the subject. He describes phlegmonous erysipelas under the name of E. spurium, or Pseudo-Erysipelas; and he says that the inflammation of the skin is the consequence (reflex) of a previously developed and more deeply-seated affection. Magazin, Vol. VIII. p. 511. He afterwards states that the original affection

contrary, considers the inflammation of the skin to be the first in order, and that of the cellular substance to be consequent*. I have not observed this succession; it seems to me that, in these cases, inflammation attacks both the skin and the cellular texture at the same time, although in other instances the latter may be the seat either of acute or chronic inflammation, in which the skin participates either slightly or not at all†. Indeed, so intimate is the connexion between them, that the latter becomes immediately involved in any considerable attack of even simple erysipelas. Mr. Arnott, who has examined the subject at much greater length, and whose paper contains many interesting facts and remarks, proposes "that the term erysipelas should be restricted to that febrile affection of the system, accompanied with inflammation of the integuments of the face, to which it has most usually been applied, and that, until we have better evidence for so doing, the expres-

is a "degeneration of the cellular structure, a true mortification (necrosis telæ cellulosæ)." p. 513.

* "The disposition to spread is very remarkable, and this probably is connected with the circumstance that the skin is primarily affected; for there is much stronger disposition to the adhesive inflammation in the cellular membrane than in the skin. It also seems probable, that the inflammation spreading over the skin, *leads it* in the subjacent cellular membrane." Observations on Inflammation, p. 237.

† See Cases XXXVII. and XXXVIII., and Dr. Duncan's very interesting paper on "Diffuse Inflammation of the Cellular Texture", in Trans. of the Med. Chir. Society of Edinburgh, Vol. I.

sions 'erysipelas' and 'erysipelatous' should not be applied to affections of the skin in other parts of the body"*. Mr. Arnott is led to consider erysipelas of the face a peculiar affection, and to separate it from other inflammations of the skin by a distinct appellation, in consequence of its being preceded and accompanied by a fever attended with a peculiar affection of the sensorium, of its determinate course, and of its being probably derived from contagion.

The affection of the sensorium and the fever seem to me to arise from the brain participating in the inflammatory excitement of the contiguous and connected parts. Should we not expect à priori that erysipelas of the head would produce much more severe sympathetic effects than that of a limb? Making the necessary allowance for slight difference of structure, the inflammation itself is exactly alike in the two cases; there is no difference in the appearance of the skin during life, nor in the changes observed after death. The facts related and cited by Mr. Arnott lead, on the first view, to a strong suspicion of contagion; but in order to justify on this ground the marked distinction which he has drawn, it would be necessary to show that erysipelas of the face is, and that erysipelas of other parts is not, contagious; neither of which points is hitherto proved†. Since

* London Med. and Phys. Journ. Vol. LVII. p. 210.

† The facts collected by Dr. Wells (Observations on Erysi-

inflammation of the cellular membrane in another form has been usually denominated phlegmon; since, in the affection now under consideration, inflammation of that texture co-exists with an inflammation of the skin, bearing all the characters of erysipelas; and since it generally leads to suppuration and sloughing, which are comparatively rare in simple erysipelas, I consider the name phlegmonous or phlegmonoid erysipelas peculiarly appropriate. A further strong reason for retaining it is, that it is used by most of the medical and surgical writers of all countries.

There is another objection to this innovation in nomenclature, namely, that the new denomination proposed in place of the old and well understood name of phlegmonous erysipelas, properly belongs to another class of cases. Dr. Duncan, Jun. has published, in the first volume of the Medico-Chirurgical Transactions of Edinburgh, under the title

pelas, in Trans. of a Society, &c. Vol. II.), Dr. Stevenson (Trans. of the Med. Chir. Society of Edinburgh, Vol. II.), and Mr. Arnott (Cases of Erysipelas, in Lond. Med. and Phys. Journal, March, 1827), clearly prove that erysipelas of the face is sometimes contagious. All these cases, with one ambiguous exception (the first case mentioned by Dr. Wells), are instances of erysipelas of the face from internal causes; I speak of the original affection. I have lately met with an instance, in which erysipelas of the face, caused by a seton in the neck, seems to have affected two individuals by contagion, producing erysipelas of the face in one, and of the lower extremity in the other. See Case 19.

of "Cases of Diffuse Inflammation of the Cellular Texture, with the Appearances on Dissection and Observations," a very interesting series of facts accompanied with nosological and pathological illustrations. These are instances of acute spreading inflammation of the cellular structure, extending along a limb to the trunk, or commencing in the latter, consequent on external injury, or appearing spontaneously, attended with fever, and causing extensive diffused suppuration, sloughing, and frequently death. The appearances on dissection, as accurately detailed by Dr. Duncan, are nearly similar to those found after death in phlegmonous erysipelas, so far as the cellular structure is concerned, except that in the former the suppurative process extends more deeply, passing between the muscles, and the muscles themselves are changed in colour, sometimes quite dark and so soft as to be easily lacerated. The absence of cutaneous inflammation is particularly remarked by Dr. Duncan: "In some cases the secondary inflammation runs its course and terminates in extensive suppuration without any redness of the skin being perceptible; and in all true cases of this disease the cutaneous inflammation is secondary, and the result of the progress of the disease from the cellular tissue to the skin. Thus in No. 25, the skin of the whole side was generally inflamed, and the cuticle separated, but this was the part to which the disease had last extended, and in which it was least advanced, while the skin of

the axilla, and over the pectoral muscles and scapula, where the disease first appeared, and had made the greatest progress, was never even discoloured; the same observation was made in almost all the other cases. In the hospital nurses there was no affection of the skin, although the existence of most extensive cellular suppuration and gangrene was positively ascertained in one of them by dissection."*

In order to show how different inflammation of the cellular structure is from phlegmonous erysipelas, and to point out what confusion would result from giving to the latter a name appropriate only to the former, I shall relate one instance of acute and another of chronic inflammation of the cellular structure. (See Cases 37 and 38.)

I am quite at a loss to discover in this affection those marks of debility which some have so much insisted on. Erysipelas, like any other inflammation, may occur in old and feeble persons, and the effects of the disease, when aggravated by injudicious treatment, or protracted from any cause, will soon weaken the most robust; but however weak the patient, the local disturbance is one of excitement; there is increased activity in the circulation of the part, clearly marked by all the symptoms. Indeed, speaking of the part, I am unable

* Page 600.

to recognize debility as the cause of any inflammation whatever, and in reference to the seat of disease, I regard the expressions of passive and asthenic inflammation, and venous congestion, as either unmeaning, or calculated to convey erroneous notions.

In attempting to establish the distinction between erysipelas and phlegmon, we perceive a fresh proof that they are not different in their essential nature. In well marked cases the yellowish or rosy redness, the extensive soft swelling, the smarting and burning pain, the vesications and subsequent desquamation, the diffused suppuration and cellular sloughs of the former, present a strong contrast to the uniform deep red, the firm circumscribed swelling, the throbbing pain, and the limited suppuration of the latter. But between these extremes there is a numerous class of intermediate cases, in many of which we doubt whether the characters approach more nearly to the one or the other, while in some there is an apparent mixture of both. Thus we occasionally find cellular sloughs in abscesses, that must be considered phlegmonous, and we see circumscribed collections of matter in erysipelatous inflammations. Erysipelas is sometimes confined to one spot, while phlegmonous inflammation may extend in its circumference, attacking fresh parts successively, so as to produce a succession of suppurations, and thus spread over a large part or even the whole of

a limb. In chronic inflammations the distinction is more obscure; they often do not resemble the description either of phlegmon or erysipelas, but approach as nearly to one as to the other.

Phlegmonous erysipelas is easily distinguished from diffuse inflammation of the cellular texture, if we select strongly marked cases of each; but here again there is a gradual transition from one to the other form of disease. On the other hand the acute form of the latter affection is connected by the more chronic cases with simple œdema.

Nosological Arrangement.

As erythema, simple erysipelas, and phlegmonous erysipelas are merely three degrees of the same affection, they ought not to be separated in our classifications. Many writers have however disregarded their natural affinity, and placed them even under different orders of disease. Cullen, for instance, puts erythema among the phlegmasiæ, erysipelas among the exanthemata. These terms are differently employed by different authors, and are sometimes used indiscriminately; while those, who lay down distinctions, do not always observe them, so that some confusion has arisen in nomenclature. "When the disease," says Cullen*, "is

* First Lines, § 274.

an affection of the skin alone, and very little of the whole system, or when the affection of the system is only symptomatical of the external inflammation, I shall give the disease the name of ERYTHEMA; but when the external inflammation is an exanthema, and symptomatical of an affection of the whole system, I shall then name the disease *Erysipelas.*" In the nosology he makes erythema * a species of the genus phlogosis, order phlegmasiæ. Now the first character of the genus is "pyrexia," and that of the order "febris synocha," to which is added "sanguis missus, et jam concretus, superficiem coriaceam albam ostendens." Under this species erythema he proceeds to include erysipelas as commonly described; that is, cutaneous inflammation ending in vesication and desquamation; carbuncle; chilblain, burn, the effects of other external irritants, intertrigo, and the stings of insects; phlegmonous and œdematous erysipelas. Although the leading characters of the exanthemata are thus expressed, "morbi contagiosi, semel tantum in decursu vitæ aliquem afficientes", Cullen has arranged under this order erysipelas†, which attacks the same individual repeatedly, and the contagious nature of which is, to say the least, very doubtful. The species are erysipelas vesiculosum (ordinary erysipelas), and erysipelas phlyctenodes (the shin-

* Synopsis Nosol. Method. Ord. II. Gen. VII. Sp. 2.

† Ord. III. Gen. 31.

gles*). The latter complaint is certainly not contagious, and may affect individuals repeatedly. Cullen seems to have been aware that his nosological arrangement of these affections was neither clear nor satisfactory; for he mentions in his First Lines that "it seems doubtful if this disease (erysipelas) be properly, in nosology, separated from the phlegmasiæ."† And he says further "with regard to erysipelas, nothing is more evident, than that it is not an exanthema like the others, because the fever does not cease upon the eruption,"‡ &c. It is difficult to understand what benefit can accrue to medical science from such attempts at arrangement as these.

J. P. Frank has placed erysipelas among the exanthemata, and erythema, under which he has included gutta rosea, chilblain, and intertrigo, among the impetigines §. Joseph Frank has separated them as distantly, and added nævi materni to the

* Other medical and surgical writers have classed the shingles (zona, herpes zoster) under erysipelas, viz. Cullen (Synopsis Nos. Method. Gen. 31.), Richter (Anfangs-Gründe, V. I. Ch. IV. § 182), Boyer (Traité des Mal. Chir. V. II. Ch. I. § 2), J. P. Frank (Lib. III. § 287), S. G. Vogel (Handbuch der Prakt Arzney-Wiss. Ed. 3. V. III. p. 337), and Rust (Magazin, V. VIII. p. 505).

† § 707.

‡ MS. Lectures quoted by Dr. Thomson in his edition of Cullen's Works, Vol. II. p. 188.

§ De Curandis Hominum Morbis, Lib. III. § 279, et seq. § 395, et seq.

above list of affections referred to erythema*. Willan † and Bateman ‡ class erythema with the exanthemata, and erysipelas with the bullæ. Yet vesication is not an essential circumstance in the disease, so that, if nosological arrangement were made to depend on the primitive form of the affection, erysipelas would not be found among vesicular diseases. M. Rayer, in his recent work on diseases of the skin §, has adopted the more natural method of placing erythema and erysipelas together, and has classed them with the exanthemata.

Most writers have admitted two other species of erysipelas; namely the *œdematous*, and the *gangrenous* or *malignant;* and others a still greater number. Œdematous erysipelas is spoken of by some as erysipelas occurring in an œdematous part ‖, while others place under the term those cases, in which, with erysipelatous redness of the skin, there is an abundant effusion of serum under it, so that the part pits on pressure. Gangrene is an effect produced either in simple or phlegmonous erysipelas, when very violent.

* Praxeos Med. Universæ Præcepta, Part I. Vol. II. Cap. 6. and Vol. III. Cap. 20.

† On Cutaneous Diseases, Order III. Genus 6. Order IV. Genus I.

‡ Practical Synopsis, pp. 117 and 124.

§ Traité des Mal. de la Peau, Chap. I.

‖ I. P. Frank, De Curandis Hominum Morbis, Lib. III. pp. 280 and 286. Boyer also employs the expression in that sense; Traité des Mal. Chirurg. tom. II. p. 8.

According to the various extent and form of the effusion under the cuticle, erysipelas has been distinguished as *miliare*, *vesiculare*, *pustulosum*, *bullosum*, or *phlyctenodes*. That which spreads successively from the point first attacked, has been called erysipelas *ambulans* or *erraticum*, while the epithets *saltans* and *volaticum* have been applied where it passes to a distant part of the body. The distinctions just alluded to are founded on differences in degree and modifications in form, and therefore hardly afford sufficient ground for establishing different species of disease. In one and the same case, and at the same time, there may be miliary and vesicular eruption, and bullæ; and such a case may be attended with sloughing. I think that every useful purpose would be fully answered by retaining the four names of erythema, simple, œdematous, and phlegmonous erysipelas.

If we were to construct a natural arrangement of diseases, we should perhaps find sufficient reasons for separating erysipelatous affections altogether from the febrile exanthemata. The latter form a natural order well characterized by the fever preceding the local disease, by their origin from a single specific cause, namely contagion, by their regular periods of efflorescence and decline, their definite duration, and by their generally affecting an individual only once in his life. Erysipelas arises from various causes, among which it is doubtful whether contagion is to be included;

it is often not preceded by fever; its course is various and uncertain; its duration indefinite, and it attacks the same individual repeatedly.

In a natural nosology, erysipelas would be classed among inflammations of the skin and cellular texture, and would follow erythema, to which we should refer slight superficial and partial inflammation, without vesication, generally without swelling or fever. This slight inflammation may extend into the cellular membrane, and be attended with swelling, as in the erythema nodosum of authors.

Of erysipelas, which may be called spreading inflammation of a considerable portion of the skin, with diffuse redness and swelling, sometimes preceded and generally accompanied by fever, it would be sufficient to admit three species; namely,—

1. ERYSIPELAS SIMPLEX; superficial spreading inflammation of the skin, with bright scarlet or rosy redness, and soft tumefaction of the part, generally with vesications and fever.

Synonyma.—*True* or *genuine erysipelas.*—*E. exanthematicum*, or *verum* (Rust, of erysipelas of the face).

Varieties.—*Acutum, chronicum; periodicum, habituale; perstans* or *fixum; ambulans* or *erra-*

ticum; saltans or *volaticum* (disappearing from its original seat, and re-appearing in a distant part); *miliare, vesiculosum, bullosum, phlyctenodes; idiopathicum, traumaticum, sympatheticum,* or *symptomaticum, biliosum, gastricum.*

2. E. ŒDEMATODES; the swollen part dark red, an dpi tting on pressure.

3. E. PHLEGMONOSUM; acute inflammation of the skin and cellular texture, with firm, general, and deep red swelling of the affected part, ending quickly in suppuration and sloughing.

Synonyma. — *Diffuse cellular inflammation* (Earle). *Inflammation of the cellular texture* (Arnott). *Diffuse phlegmon* (Baron Dupuytren). *E. spurium* or *pseudo-erysipelas* (Rust). *Phlegmon erysipelatosus.*

Causes.—There is really no difference, in this respect, between erysipelas and other inflammations. The habitual excitement of the vascular system, or the long continued disturbance of the stomach, alimentary canal, and liver, consequent on intemperance and excess, lay the foundation of inflammation generally, and it depends on individual peculiarity, or on local causes, whether the skin or other parts shall be the seat of disease. In most cases of erysipelas the biliary and digestive systems are more or less actively disordered, such

disorder appearing sometimes to produce the cutaneous affection, sometimes to be excited sympathetically by it. Hence Desault established the denomination of *bilious* in contradistinction to *phlegmonous* erysipelas: on which division it may be observed that the symptoms called bilious are commonly found also in the phlegmonous cases.

When it arises from internal causes, that is, when its appearance depends on the previous existence of disorder in another organ, it is called *sympathetic* or *symptomatic (secondary, consensuale, deuteropathicum)*. But, in a large proportion of cases, it is directly excited by external causes immediately acting on the part, and it is then called *idiopathic** *(primary, protopathicum)*. Thus it is caused by external irritants of all kinds; by heat or cold, by blisters, issues, setons, caustics, or other acrid matters applied to the skin; by wounds, punc-

* The explanation which I have given of the epithets *idiopathic* and *sympathetic*, as applied to erysipelas, accords with the original signification of the words, and with the usage of the best modern writers. See Dict. de Médécine, Tom. XII. art. *Idiopathie*. Hildenbrand, Inst. Prac. Med. Vol. III. p. 604; Chelius, Handbuch, Vol. I. p. 60; Rayer, Traité des Mal. de la Peau, Tom. I. p. 108. It must be observed, however, that Callisen seems to use these terms respectively in the opposite senses: see Syst. Chir. Hod. Tom. I. p. 243; and that the epithet *idiopathic* is often applied, in this country, to erysipelas arising from internal causes. Pearson's Principles of Surgery, Ed. 2, p. 200 and 203, Arnott, in Lond. Med. and Phys. Journal, March, 1827.

tures, bruises, surgical operations, and all kinds of injury *(traumatic E.)*. The mechanical or chemical irritation of wounds, ulcers, or other local diseases will cause it.

Neglect of previous preparation, inattention to diet, injudicious modes of dressing, continued exercise of the affected part, and an imprudent degree of general exertion, are frequent causes of erysipelas after operations and wounds, and in the course of ulcers and other local affections. When these several points are properly attended to, we shall not be much troubled with traumatic and hospital erysipelas.

Irritating plasters, a heating load of dressings, and tight bandaging, are common causes of erysipelas, whether in the case of wounds or operations. Light applications and keeping the part cool are simple but effectual preventives. The most frequent source, however, of this affection, after accidents or operations, is improper diet, that is indulgence in animal food, or fermented liquors; and the surgeon is, in many cases, more to blame than the patient. He frequently does not enforce the necessary precautions and restrictions, and often appears as anxious, under the absurd fear of debility, that the use of meat, wine, and beer should be renewed, as the patient or friends usually are. During the confinement consequent on a wound or operation, these articles should be pro-

hibited; that should be the general rule, to which exceptions may be allowed under particular circumstances.

Simple erysipelas, and those cases more especially, which some writers have denominated the exanthematous, true, or genuine species of the complaint, are usually of the sympathetic kind, arising from internal causes, particularly from disorder of the primæ viæ or liver: hence the epithets *bilious* and *gastric*. As these causes are more or less permanent, they may produce repeated attacks of the disease, or render it of long duration: hence the expressions of *periodic*, *chronic*, and *habitual* erysipelas. The occurrence of erysipelas of the face may be traced in some instances to contagion.

Phlegmonous erysipelas is more commonly idiopathic; it supervenes on the wound of venesection, on injuries of the superficial bursæ, as those of the patella and olecranon, on incised and lacerated wounds, and compound fractures. An inflamed state of ulcers, especially in the lower extremities, is a common cause of it. This frequently comes on when large ulcers or extensive wounds are healing rapidly, in persons confined to bed and allowed a full diet of meat and beer. It has often been produced by wounds received in dissection.

Treatment.—As this affection resembles other inflammations in its causes, symptoms, and effects, so

it must be treated on the same principles; that is, on the antiphlogistic plan. Venesection, local bleeding, purging, and low diet are the first measures, to which saline and diaphoretic medicines may be afterwards added. The earlier these means are employed the better: vigorous treatment in the beginning will often cut the attack short, and prevent the disease from spreading beyond its original seat. (Cases 7, 8. 10, 11. 13. 17.) As the skin and cellular membrane are of secondary importance, it is not so urgently necessary to arrest inflammation in them, as in the vital organs; neither does the same reason for very active treatment exist as in affections of the eye, where a slight change of structure may seriously impair the utility of an organ essential to our comfort and pleasure: but the extensive suppuration and mortification, which erysipelas sometimes produces, may render a limb in great measure or totally useless, or may even destroy life.

The disposition of erysipelas to terminate by resolution is another reason against resorting indiscriminately to active depletion. In many cases the disease passes through a certain course and ends spontaneously: it is sufficient to put the patient on low diet, to clear the alimentary canal, and then to use mild aperients and diaphoretics. When it proceeds, as it often does, from unhealthy conditions of the alimentary canal, the removal of the internal disorder leads to the cessation of the local

complaint. It must however be observed, that venesection is sometimes useful, both in curing the internal cause of erysipelas and in promoting the termination by resolution.

It will appear from the foregoing remarks, that in contending for the inflammatory nature of erysipelas, and for the propriety of treating it antiphlogistically, I do not mean to recommend that measures equally active, and, in particular, that bleeding whether general or local, are to be employed in all cases. In young persons, in the robust and those of full habit, in instances where the pulse is full and strong, or when there is headach and white tongue, in erysipelas of the head attended with symptoms denoting affection of the sensorium, and more especially in the very beginning of the affection, venesection will be proper, and it may be necessary to bleed largely, to repeat the evacuation, or to follow venesection by local abstraction of blood. (Cases 7, 8, 9. 11, 12, 13. 17.) Under such circumstances, the other parts of the antiphlogistic plan must be also employed, that is, the alimentary canal should be cleared by an active purgative, which may be followed by salines and antimonials, with the occasional use of milder aperients; and low diet should be enjoined. Nothing can be more different from such a case, than that of an elderly person with a small and feeble pulse, in the advanced stage of the disease. The interval between these extremes is filled by

numerous gradations requiring corresponding modifications of treatment. The antiphlogistic plan itself embraces a wide range in point of degree; from blood letting, local and general, with purging, vomiting, the free use of mercury and antimony, and low diet, to the exhibition of a mild aperient, with some saline medicine. (Case 19.) The treatment of erysipelas, like that of any other inflammation, must be modified according to the age, constitution, previous health and habits of the patient and the period of the complaint. In asserting generally that the antiphlogistic treatment is proper, I speak of the beginning of the disease, when the original and proper character of the affection is apparent; and I am decidedly of opinion that, in some shape or degree, such treatment will always be beneficial in that stage. In many instances active antiphlogistic measures are of the greatest service in lessening the severity both of the local and general symptoms. In others the administration of calomel with aperients, and of diaphoretics with low diet, will be sufficient. When the affection occurs in old and debilitated subjects, the powers of life are soon seriously impaired, and our efforts must be directed rather towards supporting them, than combating the local affection. I have often seen such patients labouring under erysipelas of the face in its advanced stage, with rapid and feeble pulse, dry and brown tongue, recovered, under circumstances apparently desperate, by the free use of bark and wine.

The cases of erysipelas, which I have seen in young persons, have almost all proceeded from external causes, and required antiphlogistic treatment. The tonic and stimulating plan has been injurious to such patients under all circumstances.

Local bleeding is sufficient in the milder cases of erysipelas, and is often necessary in the more severe ones, as an auxiliary measure. It may be accomplished either by cupping or leeches. The former, where practicable, is the most efficacious: a great objection to it arises from the painful state of the inflamed skin. Although leeches, when applied to the sound skin of some individuals, produce an effect analogous to erysipelas, they exert no similar influence over the inflamed skin, to which they may be applied freely and safely. (Cases 9 and 18.) The apprehensions expressed by Willan*, Thomson† and others are groundless‡.

* "I must however observe, that it is not safe to put either blisters or leeches on or near the diseased surface." On Cutaneous Diseases, p. 518.

† "It has been observed that punctures and leech-bites in inflamed cutaneous texture are liable to aggravate the inflammation already existing, or even to bring on the state of mortification." Lectures on Inflammation, p. 186.

‡ "The former [leeches] I have used in many cases, and I have never seen the dreaded mortification of their bites."—"In many of the cases leeches were very freely applied to the seat of the pain, swelling and inflammation, and, although in some instances they were supposed to do harm, I am rather disposed to think that the subsequent increase of inflammation was the natural progress of the disease, which they were unable to

In order to produce any decided benefit, they must be applied in large numbers. Respecting the plan of taking blood from the part by small punctures with a lancet, which has been used extensively with so much success by Dr. Dobson, I refer to his own observations, printed in the present volume.

For the satisfaction of those who may hesitate to adopt a practice unless it should be sanctioned by authority, I may cite much testimony, both of fact and opinion, in favour of the antiphlogistic treatment. In the short chapter which he has devoted to the subject under the title of "Febris Erysipelatosa," Sydenham * has described the

check: of this at least I am certain, that in none of the cases in which they were applied under my observation, did they show the least tendency to fester or become gangrenous." Dr. Duncan, Jun. in the Medico-Chirurgical Transactions of Edinburgh, Vol. I. p. 638.

* "Ubi primum accedo, satis largam sanguinis quantitatem e brachio extrahi præcipio, qui quidem pleuriticorum sanguinem fere semper æmulatur. Die sequente blandam illam potionem catharticam mihi in praxi familiarem exhibeo. Peracta catharsi, partem adfectam sequenti decocto foveri jubeo.—Æger insuper ut jusculis tantum hordeaceis atque avenaceis, cum pomis assatis vescatur, volo; tum etiam cerevisia utatur tenuissima, et per horas aliquot a lecto sibi temperet. Hac methodo tum febris, tum alia symptomata, citissime ut plurimum fugantur. Sin aliter, rursus venam seco; quod et tertium nonnunquam fieri debet, interposito semper die uno, si prava nempe adsit sanguinis diathesis, et febris intensior." Obs. Med. circa Morborum Acutorum Historiam et Curationem, Sect. VI. cap. 6.

phenomena and course of the disease briefly but very clearly, and has recommended a simple plan of treatment, consisting of venesection, purgatives, low diet, and fomentation to the part. "I think," says Cullen, speaking of erysipelas, "that bleeding is as necessary here as in any phlegmasiæ, where we allow the fever to depend on the topical affection: and further, not only on the first appearance of suspicion, but at any time in the after progress of erysipelas, bleeding may be practised, and is necessary, in proportion to the degree of the fever attending, and to the violence of the topical inflammation." He again states, "upon this conclusion, the erysipelas of the face is to be cured very much in the same manner as phlegmonic inflammations, by blood-letting, cooling purgatives, and by employing every part of the antiphlogistic regimen; and our experience has confirmed the fitness of this method of cure. The evacuations of blood-letting and purging are to be employed more or less according to the urgency of symptoms, particularly those of the pyrexia, and of those which mark an affection of the brain. As the pyrexia continues, and often increases with the inflammation of the face, so the evacuations mentioned may be employed at any time in the course of the disease."* He adds, that although erysipelas may occur in other parts of the body, and be accom-

* Works by Dr. Thomson, Vol. II. p. 188.

panied with pyrexia, the symptoms are less violent, and the complaint less dangerous than in the face, so that it does not require equally active treatment.

Richter* advises venesection in the more violent forms of the complaint, and states that it is indispensably necessary when the fever runs high, and more particularly when the head is the seat of disease. He considers bleeding contra-indicated by the presence of gastric symptoms. For the latter he resorts to emetics and the free use of purgatives.

The precepts of Vogel† on the same subject are nearly similar. He directs venesection and its repetition if necessary, together with the antiphlogistic treatment generally, when the patient is plethoric and the fever inflammatory. But he observes that blood is not to be drawn so freely as in true inflammations, because the fever of erysipelas is seldom, if ever, purely inflammatory.

J. P. Frank‡ recommends repeated venesection, followed by local bleedings in cases of inflammatory character, with full and strong pulse, especially when the head is affected. He thinks

* Anfangs-gründe der Wundarzney-kunst, Vol. I. § 188.

† Handbuch, Vol. III. p. 348.

‡ De Curandis Hominum Morbis, Lib. III. p. 54.

that the gastric symptoms need not be regarded, as they arise from inflammatory irritation. When the trunk or the extremities are the seat of disease, the lancet is not to be employed so freely. Joseph Frank* strenuously advises venesection in inflammatory cases, observing that leeches may be used if the protracted stage of the disorder should render bleeding inadmissible.

Dr. Duncan, Jun. has published in the Edinburgh Medical and Surgical Journal, Vol. XVII., under the head of "Cases of Erysipelas successfully treated, chiefly by Venesection," the details of ten cases, accompanied with judicious remarks on the treatment and nosology of erysipelas. Nearly all of these were treated by large bleedings, which in several were repeated: and the results fully bear out the concluding remarks of the author. "These cases, I think, sufficiently prove that there is nothing in the nature of erysipelas

* "Venæsectione autem, quemadmodum in genuinis inflammationibus, utimur in ægro robusto et florido, in morbo recente, sub anni constitutione morbis inflammatoriis favente, sub pulsu constante, in morbo phlegmonoso cum sopore et delirio. Nec symptomatum sive gastricorum, sive nervosorum hepatis cum cerebro aut nervorum cum ventriculo consensui tribuendorum præsentia, hic a venæsectione nos absterreat. Si provecto in morbo vires jam evidenter fractæ usum venæsectionis dubium redderent, ad hirudines, quocumque tempore, sub gradu mali minore phlebotomiæ locum facile tenentes, confugiendum foret." Praxeos Medicinæ Universæ Præcepta, Ed. 2. P. I. Tom. II. p. 165.

essentially different from other inflammations. In ten cases occurring in immediate succession, the antiphlogistic treatment generally was employed with decided advantage. Two or three cases only were not bled, because they were so slight as not to require it; and wine was given to one patient only, in a state of extreme exhaustion from chronic disease. It cannot be said that these cases were all of that variety called phlegmonoid, which has always been considered to require some depletion; for, in their external appearance, they presented every variety of form; and they occurred in patients of both sexes, at different ages, and in opposite states of previous health; and, as I have repeatedly said, they were not selected as suited to the treatment employed, but were all that occurred. I am aware that something may have been owing to the constitution of the season or year, as all diseases are now considered to partake more of a phlogistic diathesis than formerly. But I cannot avoid coinciding with Professor Hufeland, that the alleged periodical change in the character of diseases, depends as much upon fashion in medical opinion, as upon real difference in their nature. Sure am I, that the continued fever, which we now treat antiphlogistically, is the very same that, thirty years ago, was treated with the most powerful stimuli."*

* Edinburgh Medical and Surgical Journal, Vol. XVII. pp. 560, 561. In the same Work, Vol. XXIV. will be found "A Case of Erysipelas of the Face successfully treated by W. Maclean,"

According to the statements in two works* recently published, it should seem that the surgeons and physicians of Paris adopt very decidedly the antiphlogistic plan of treatment, and disapprove of the use of tonics and stimulants. The authors alluded to recommend venesection, particularly in the beginning of the disease, and its repetition, when necessary; the free use of leeches to the inflamed part, low diet, acidulated and diluent drinks. Such are the means they advise in simple erysipelas, when it is violent and accompanied with fever, in erysipelas of the face and head, in phlegmonous erysipelas of the limbs, and in œdematous erysipelas, when the tumefaction has been produced by the inflammation. They advise the application of leeches to the epigastric region, where the cutaneous inflammation has been caused sympathetically by gastro-intestinal irritation.

On the other hand, high authorities may be brought forward against the use of the lancet in erysipelas; these are principally of comparatively modern date. Some of them not only object to evacuations of all kinds, but recommend tonics

in which a bold antiphlogistic treatment was eminently successful; p. 285. And in the same volume, p. 287, is "An Account of Cases of Erysipelas treated chiefly by Leeches and Warm Fomentations," by W. H. Burrell, with some short but very sensible remarks.

* Roche et Sanson, Nouveaux Elémens de Pathologie Medico-Chirurgicale, Tom. I. p. 351. Rayer, Traité Théorique et Pratique des Maladies de la Peau, Tom. I. p. 221—241.

and stimuli, such as bark, ammonia, and wine. "I believe", says Dr. Fordyce, "there are many practitioners in this country who still adhere to the treatment of erysipelatous inflammation, and those of the mucous membrane, when pure, by bleeding and other evacuations, which *I have always found hurtful.*" * He mentions that he includes under erysipelatous inflammation "inflammation of the skin, when it only is inflamed, or inflammation of the surface of an ulcer, when the very surface only is sore and inflamed, or inflammation of the mucous membrane, where there is little secretion from the mucous glands." † "In all such cases which are pure, that is unmixed with phlegmonous inflammation, or increased secretion from the mucous glands, even in some cases of the latter intermixture, Peruvian bark is the most powerful remedy that can be employed, and is almost always successful. It should be exhibited in substance, if the patient's stomach will bear it, and in this disease it will almost always bear it, and in as great a quantity as the patient's stomach will bear, which is commonly to the quantity of a dram every hour." ‡

Dr. Wells §, who, like Dr. Fordyce, was phy-

* Transactions of a Society for the Improvement, &c. Vol. I. p. 293.

† Ibid. p. 291.

‡ Ibid. p. 293.

§ Ibid. Vol. II. p. 224.

sician to St. Thomas's Hospital, strongly recommends the same practice, and argues that the delirium and coma, which occur in bad cases of erysipelas affecting the head, do not depend on inflammation of the brain or membranes; and that, generally speaking, there is not an inflammatory state of the system in erysipelas.

Although Cullen speaks of erysipelas as not requiring evacuations in all cases, his representations do not seem to be founded on his own experience. "We have hitherto considered erysipelas as in a great measure of a phlegmonic nature; and, agreeably to that opinion, we have proposed our method of cure. But it is probable, that an erysipelas is sometimes attended with, or is a symptom of a putrid fever, and, in such cases, the evacuations proposed above may be improper, and the use of the Peruvian bark may be necessary; but I cannot be explicit on this subject, as such putrid cases have not come under my observation." *

His MS. lectures contain the following observations in reference to the same point: "I have heard of late, with regard to this subject, of different opinions of some very excellent physicians, some London practitioners, who tell us that the erysipelas faciei is to be cured by the bark. I

* First Lines, 1786. Vol. II. p. 233.

cannot pretend to judge till I see the particular cases, and I can imagine that there are cases which are not phlegmonic erysipelas, but on the contrary arise from the effusion of an acrid humour, which is remarkably disposed to turn into gangrene: but in this country I have not met with one case of this kind, and of fifty cases, I have seen forty cured by bleeding as plainly as any phlegmasia whatever. I have had cases which proved fatal, but these were few, and evidently with a communication to the internal carotid arteries; and perhaps they were only to be overcome by this same venesection." * Again, in his Materia Medica, he says, "I have very constantly found erysipelas to be more or less of the phlegmonic kind; and in this country I have hardly seen it in any degree putrid. In erysipelas, therefore, I have found the bark generally hurtful; but from the account of authors, it appears to be sometimes of a putrid nature, although, as I judge, especially, perhaps only, when it accompanies other diseases of a putrid kind, and in such cases the bark may be a necessary remedy." †

Dr. Willan almost proscribes the employment of bleeding in erysipelas. "All the ancient writers," he observes, "except Galen, recommend bloodletting as a principal remedy in the treatment of

* Works, by Dr. Thomson, Vol. II. p. 189.
† Ibid. p. 191.

erysipelas. This practice must evidently be improper in the three forms of erysipelas last described [namely the œdematodes, gangrenosum, and erraticum], and even in the erysipelas phlegmonoides it does not always appear necessary. When the blood drawn is sizy, practitioners are often induced to bleed a second time; but we generally find, in London, that repeated blood-letting aggravates the symptoms and protracts the disease. In a comatose or apoplectic state the application of leeches or cupping-glasses at the nape of the neck may be advisable." * Such are the observations of Dr. Willan respecting the treatment of a complaint, in which, by his own description, violent local inflammation, marked by intense shining red colour, burning heat and excruciating pain, is combined with severe febrile symptoms and serious affection of the brain, and produces extensive suppurations, ulceration, and mortification, thereby causing material injury to the muscles and tendons of the parts affected.

The sentiments of Willan are echoed by Bateman. "Blood-letting, which has been much recommended as the principal remedy for the acute erysipelas, is seldom requisite; and, unless there is considerable tendency to delirium or coma, cannot be repeated with advantage, at least in London and other large towns. Local bleeding and blis-

* On Cutaneous Diseases, p. 507.

tering may be substituted in such cases, but not upon or very near the diseased surface."* Dr. Bateman, however, enters his protest against cinchona and opium. "The administration of cinchona and opium in this form of the complaint (the phlegmonous) is certainly unnecessary, and appears to be of very equivocal safety, notwithstanding the authority upon which it has been recommended." †

The objections of Cullen and Bateman to the use of bark are probably founded on their observation of the practice in medical cases. Mr. Hutchison ‡ gives a similar testimony from his surgical experience. "I have never found bark (cinchona) of any service, except in that species of erysipelas styled erysipelas erraticum, and not always then."

In the preceding quotation, Dr. Willan particularly objects to the employment of blood-letting in London, and he is followed by Dr. Bateman, who extends the prohibition to other large towns. How far this influence of London reaches; at how many miles bleeding becomes safe or proper; and what size or population of a town renders it inadmissible, are important questions on which we are

* Practical Synopsis of Cutaneous Diseases, p. 131.

† Ibid.

‡ Letter to Dr. Butter, published by the latter in his Remarks on Irritative Fever, p. 234.

left in the dark. Neither do we learn whether the same objection to venesection exists in Edinburgh and Dublin, or in the great cities of the Continent. I believe that the discovery has not been made in any of those situations; I agree in opinion with Dr. Duncan, Jun. *, that this strange notion of erysipelas being so different in its nature in London and the country, as to require opposite treatment, is supported neither by experience nor argument; and I consider that the subjoined cases prove it to be completely erroneous. The inhabitants of London, from the highest to the lowest, with few exceptions, indulge their appetites freely; there are no small towns, nor any parts of the country, in which the consumption of animal food and of stimulating liquors is more general. These habits, of which the injurious effects are aggravated in many instances by sedentary occupations or indolence, produce their natural consequences, namely, a plethoric state of the system, and an abundance of inflammatory disease, both of which circumstances will be immediately recognized on attentive observation whether among the higher or lower classes. I have not the least doubt that inflammations are as common and as violent among cocknies as among countrymen; and that they require the same treatment in both instances. The dread of depletion has been transmitted from one

* Edinburgh Medical and Surgical Journal, Vol. XVII. p. 561.

to another without examination or inquiry, and has led to an inert practice, under which disease has too often been suffered to proceed almost uncontrolled.

Dr. Carmichael Smith, at the same time that he objects to venesection, points out the dangers which attend the opposite plan of treatment. "In general we may venture to say that the lancet is seldom necessary for the cure of the erysipelas; but that we frequently experience the most salutary effects from the use of emetics, gentle laxatives, and neutral salts, especially when combined with camphor, sweet spirit of vitriol, absorbents, æther, &c.; that cases also occur, in which (particularly towards the conclusion) the strength of the patient requires to be supported by broths, wine, &c., and where the free use of the bark, with aromatic cordials, is necessary to check the tendency to gangrene. At the same time I think it a duty to declare that from the injudicious use of these medicines, in the beginning of the disease, I have often seen the tendency to gangrene accelerated, nay, evidently brought on by the very means used to prevent it."*

Mr. Pearson represents erysipelas to be an affection widely differing from inflammation†;

* Medical Communications, Vol. II. p. 190.

† Principles of Surgery, 1808, p. 187.

and respecting the treatment of it, even in the acute form, he says "that cases very rarely occur in large towns, where bleeding is at all admissible; and a repetition of the operation will very seldom be necessary or advisable."*

Dr. Thomson, speaking of inflammations of the skin generally, says that the constitutional symptoms attending them "are sometimes of the sthenic, though most frequently of the asthenic character. Hence it is that we have so seldom occasion to employ venesection in cutaneous inflammation."† He observes, on another occasion, that "the constitutional symptoms in the inflammatory affections of the cellular membrane, like those attending the inflammation of the skin, are usually of an asthenic character."‡ The term asthenic, as employed here by Dr. Thomson, is not very clear; and the context does not contribute to elucidate its meaning; for he says, in the same page, that phlegmon is the most common form in which inflammation appears in this structure; so that, by putting together the two passages, we should be led to infer that the constitutional

* Principles of Surgery, 1808, p. 211. He objects to loss of blood even in erysipelas consequent on wounds of the head, merely admitting that the abstraction of a few ounces by cupping may be allowed in the early stage, or that leeches may be applied if the brain is likely to be affected, p. 214.

† Lectures on Inflammation, p. 145.

‡ Ibid. p. 146.

symptoms of phlegmon are generally asthenic, although this affection has usually been regarded as the type of active inflammations; and the epithet phlegmonous is often used as synonymous with acute or violent.

The direct opposition, both in opinion and practice, which the preceding quotations disclose, must appear very extraordinary, and not calculated to increase our confidence in medical doctrines. I see no mode of reconciling the difference. It is true that erysipelas goes through a certain course, and ends by resolution in many cases, not requiring any active treatment. Bark and ammonia would probably not materially alter the character and progress of the affection: it may be reasonably doubted whether these remedies, more especially the former, have so much influence on the system, as we are inclined to believe.

Although Desault restricts the use of emetics to what he calls bilious, in contradistinction to phlegmonous erysipelas, I do not consider them sufficient, as the principal means of treatment in many of those cases. (See Cases 5. 7. 13. 17.) They are however useful after the abstraction of blood, where the tongue is furred and nausea or sickness is present. When the latter symptoms are not accompanied by much febrile disturbance, the emetic plan may be pursued, and followed by aperients and diaphoretics. The liquor antimonii

tartarizati may be given in the dose of half an ounce every half hour, until the stomach is cleared. This may be followed by calomel and aperients.

Under the like circumstances, that is, when a white tongue and other symptoms of disordered digestive organs remain after the use of evacuations, the local disease continuing, the free use of calomel alone, or combined with James's powder, is very advantageous: it acts copiously on the bowels, cleans the tongue, and improves the state of the stomach. Two, three, or four grains of calomel, either alone, or joined with two or three grains of James's powder, may be given every six hours, for one, two, or three days. The hydrargyrus cum cretâ might be used in the same way. (See Cases 2. 4, 5, 6. 8. 11, 12, 13, 14.)

When the means now detailed have arrested the inflammation, the patient is probably reduced in strength, and may seem to require the aid of good diet and tonic medicines. Medical practitioners in general are anxious to begin the strengthening plan; they seem to have the fear of debility constantly before their eyes, and lose no time in directing the employment of bark, and recommending animal food with beer or wine. In this way relapses are frequently produced; the inflammation and fever are renewed, further local mischief is caused, and recovery is retarded. When indeed the redness

and swelling of the part are gone, when the pulse is quiet, and the tongue clean, that is, when the patient is well, there can be no great objection to the bark. The natural powers of the system quickly restore its strength, when the disease has been stopped by active treatment; in such cases strengthening medicine and regimen are not required. In others they must be used with the greatest caution. (Cases 2. 18, 19.) Sometimes they are at once obviously injurious; in others they do good at first, but soon cause a return of the complaint if persevered in. It is safest therefore to leave them off as soon as the state of the pulse, or of the other symptoms, which have indicated their employment, is changed. The subcarbonate of ammonia is the best medicine in those cases, in which we doubt whether stimuli should be employed or not. It may be given without any risk of reproducing inflammation, while in most cases it is decidedly advantageous. Five, six, or eight grains may be administered in a draught every three, four, or six hours. (Cases 6 and 10.) Dr. Peart* and Mr. Wilkinson† regard it almost as a specific in scarlet fever and erysipelas.

Bark comes next in order to the volatile alkali; and the sulphate of quinine is the most eligible

* Practical Information on Erysipelas, Erythema, &c. 1802.

† Remarks on Cutaneous Diseases, 1822. p. 16.

form of the remedy. Wine is sometimes necessary; but it should be used very sparingly, and discontinued as soon as the necessity has ceased.

General experience has determined that local applications possess but little efficacy; they relieve the patient's feelings however, if they do not contribute greatly to stop the disease. In the commencement, and before the inflammation is fully developed, cold applications are very agreeable by lessening the sharp burning heat of the skin. If their use is preceded and accompanied by a proper plan of general treatment, there is no fear that the diminution of the external affection will cause inflammation of any internal part. Warm applications, more especially fomentations, are very soothing when the inflammation is developed. To derive the full benefit from them, they should be used steadily for hours together, and the part may be covered with a warm bread and water poultice in the intervals of fomenting.

Dr. Peart recommended a lotion consisting of subcarbonate of ammonia and superacetate of lead, of each, one drachm; rosé-water one pint. This is highly extolled by Mr. Wilkinson.

The application of blisters to the inflamed surface, employed in France, has been sanctioned by the high authority of Baron Dupuytren. The

phlegmonous and the erratic species of the complaint, more particularly the latter, have been thus treated. In a surgical thesis, printed at Paris, the following summary of the treatment, adopted by Baron Dupuytren in erysipelas, is said to have been taken from his clinical lectures:—

"If the skin be red, tense, dry and hot, with fever (éréthisme général)—if the tongue be dry and red, a blister or an emetic would do harm—bleedings and leeches are proper. In a bilious constitution, with the tongue covered by a yellow mucous coat, and bitter taste in the mouth, with pains in the head and bilious evacuations, an emeto-cathartic, or the tartrite of antimony in a large quantity of fluid is indicated. When the tongue is moist and slightly red, the skin moderately tense and hot, when there is local inflammation with little general reaction, the erysipelatous phlegmon should be brought to a crisis by suppuration, excited externally, by one or more blisters. If the local inflammation have a languid atonic character without symptoms of sanguineous or bilious plethora, if in short the state of debility be well marked, which will happen particularly in old subjects, we must immediately resort to tonics."*

The author of this thesis observes, that the application of blisters is not safe when the head,

* De l'Erysipèle Phlegmoneux, par F. Olivet, p. 30.

chest, or abdomen is affected; that a blister applied to the neck caused delirium and death; and that a patient died on the following day in consequence of one having been placed on the chest. He states, that in the year 1818, these affections generally ended in suppuration, and that the use of blisters was not so advantageous in that year.

Rayer* disapproves the use of blisters: and Roche and Sanson speak of the practice in a manner which is not calculated to recommend it. "If the erysipelas is spreading (ambulant), if it threatens to affect successively a large portion of the skin, to last a long time, or to extend indefinitely, it is necessary to fix it by the application of a blister in its centre. But this method, which always occasions severe pain, which usually leads to the formation of an abscess, and which sometimes causes mortification of the part to which the blister is applied, must be employed with caution, and only in cases where the extension of the inflammation might lead to serious consequences."†

I have tried this treatment three or four times in simple erysipelas of the extremities, applying the blister on the boundary of the inflamed and

* Traité des Mal. de la Peau, p. 125.

† Nouveaux Elémens de Pathol. Medico-Chirurgicale, Tom. I. p. 352.

sound parts, so as to cover an equal portion of each. The inflammation stopped in these instances; but, as other means were employed at the same time, I could not determine how much of the benefit was due to the blister, which, however, did not cause suppuration nor any other unpleasant effect.

"I perfectly recollect," says Mr. Hutchison, "one instance, which was in the person of an intelligent surgeon in London, where a blister was applied completely round the arm, so as to encircle it some little distance above the described line of demarcation, that stopped, or seemed to stop the progress of the disease; for the inflammation did not extend above the blister, and the patient recovered."*

Compression, by means of bandages applied throughout the whole length of the inflamed limb, has been extensively employed in France by Messrs. Bretonneau† and Velpeau‡, the latter of whom has published numerous cases of erysipelas

* Letter to Dr. Butter, in his Remarks on Irritative Fever, p. 283.

† In his thesis De l'Utilité de la Compression dans les Inflammations Idiopathiques de la Peau, 1815.

‡ Mémoire sur l'Emploi du Bandage compressif dans le Traitement de l'Erysipèle Phlegmoneux, de la Brûlure, et de plusieurs autres Inflammations aiguës des Membres; in the Archives Générales de Médecine. Tom. II. pp. 192 and 395.

of all kinds and in all stages, treated in this manner with a degree of success so great and uniform as to appear almost suspicious; at least similar success does not attend the same treatment employed elsewhere, which on the contrary seems by no means free from danger. In a case related by Dr. Duncan it caused a serious aggravation of the inflammation, and death; and similar injurious consequences ensued in the only instance in which I have seen it tried (see Case 36). In the former patient, a maid-servant of thirty-six, after headache and other feverish symptoms, inflammation occurred in the fore-arm and arm, with redness, swelling, and acute pain, which were not relieved by venesection, purging, and fomentations. A bandage was applied firmly from the fingers to the elbow at first with relief. "The pain however soon became excruciating, and at the earnest desire of the patient the bandage was loosened. Above the bandage the arm was observed to be very much swelled and inflamed." On the following day "she had not quite so much pain, but the inflammation of the arm was become much darker, her pulse much weaker, and her countenance sunk. Several vesicles of considerable size containing a dark coloured fluid were scattered up and down the arm both above and below the elbow." Death ensued the next day *.

* Transactions of the Med. Chirurg. Society of Edinburgh Vol. I. p. 543.

Treatment of Phlegmonous Erysipelas.

Venesection, and the application of leeches in large numbers to the inflamed part, together with the antiphlogistic treatment generally, may be advantageously employed in the early stage of phlegmonous erysipelas, in order to prevent the full development of the affection. The bleeding of the leech-bites should be encouraged by warm fomentations, and cold lotions may be afterwards applied to the part: when, however, the inflammation is more advanced, the latter must be exchanged for fomentations and poultices. After the bowels have been evacuated, calomel and antimony may be freely administered, accompanied with saline medicines. The local abstraction of blood is more serviceable than venesection; the latter therefore may be reserved for the instances in which the patient is young and plethoric, the pulse full and strong, or the head much affected.

If we do not cut the disease short in its earliest stage by this kind of treatment, or if, as very frequently happens, we do not see the case until the inflammation is fully established, perseverance in direct depletion is of little avail in checking its further progress. The inflammation will now pursue its course, both in the cellular membrane and skin, in spite of bleeding, whether general or local; suppuration and sloughing speedily supervene, and these destructive processes soon extend over a

large portion of a limb. Indeed I have found that venesection exerts but little influence over inflammation of the cellular texture, and therefore recommend its occasional employment, not so much with the view of arresting the local disorder, as on account of the feverish symptoms when they are considerable (Cases 26 and 29). I have repeatedly found both general and local bleeding fail to accomplish the former object, in proof of which, I may refer to Cases 20. 22, 23, 24, 25. Dr. Butter regards venesection as absolutely injurious. Of fifteen severe cases which occurred within a short period at Plymouth Dockyard, twelve died. Two out of the three patients who recovered were not blooded; and twelve died out of thirteen who lost blood*. The mortality in these cases so far exceeded the ordinary rate, that I cannot regard them as a fair specimen of the affection, nor admit the propriety of applying to the treatment of erysipelas generally the inferences drawn from what occurred in them. It is to be regretted that Dr. Butter did not see these cases himself: he might perhaps have thrown some light on the causes of so unusual a mortality.

The most powerful means of arresting the complaint, is by making incisions through the inflamed skin and the subjacent adipous and cellular textures, which are the seat of disease. These inci-

* Remarks on Irritative Fever, p. 248.

sions are followed very quickly, and sometimes almost instantaneously, by relief and cessation of the pain and tension (Cases 24. 28. 30, 31.); and this alleviation of the local suffering is accompanied by a corresponding interruption of the inflammation, whether it be in the stage of effusion (Cases 21, 22, 23, 24. 26. 28. 30, 31.), or in the more advanced period of suppuration and sloughing (Cases 20. 22. 25. 27. 29). The redness of the skin is visibly diminished during the flow of blood from the incisions; in twenty-four hours it has usually disappeared, and the skin itself is found wrinkled from the diminution of the general inflammatory tension. The immediate relief, although very desirable to the patient, is however of less consequence than the decided influence of the practice in preventing the further progress of the disorder; and this important result has never failed to occur, within my experience, when the case has been a proper one for the practice, and the state of the patient has admitted of its being fairly tried. The cases already referred to furnish the clearest evidence on these points.

The treatment by incisions is suited to various stages of the complaint; but it is employed to greatest advantage at the beginning, since it prevents the further extension of inflammation, and the occurrence of suppuration and sloughing (Cases 30, 31. 24. 26. 28.). The redness and swelling gradually subside; the surface of the cut granu-

lates, and it heals rapidly. At a more advanced period, the incisions limit the extent of suppuration and gangrene; and at a still later time, they afford the readiest outlet for matter and sloughs, and facilitate the commencement and progress of granulation and cicatrization. When the matter has been fully discharged, and the sloughs, whether of the skin or cellular membrane, have separated, a healthy granulating surface is left, and no great difficulty is experienced in effecting cicatrization, unless the destruction of the skin should have been very extensive, when the cicatrix forms slowly, and is liable to give way again.

To preclude the possibility of misconception on a practical point of so much importance, I beg to observe that I do not advise incisions in erysipelas generally, but confine their employment to cases of the phlegmonous kind. We cannot however determine our treatment merely by reference to the name of the affection. Diseases appear quite distinct in nosologies, but we find them shaded off and so blended in nature, that it is frequently very difficult to mark out their boundaries. The presence or absence of inflammation of the cellular texture will not afford the criterion we are in search of on this occasion; indeed the difference between simple and phlegmonous erysipelas is rather in the degree than in the seat of the affection. Simple erysipelas seldom takes place without some inflammation of the cellular membrane. We may

trust to the antiphlogistic treatment already described in doubtful cases, in the milder instances of phlegmonous erysipelas, and in the very early period of the more severe ones. It is important, however, to decide the point quickly, and to make the incisions without delay where we judge them necessary, as they stop the progress of the disorder, and prevent the occurrence of suppuration and sloughing.

The efficacy of the treatment in phlegmonous erysipelas naturally leads us to suppose that it may be employed with advantage in some cases, respecting which it may be doubted whether they come clearly under that technical denomination; and experience has already furnished proofs that such an expectation is well founded. My friend Dr. Tweedie, who had seen some of the cases recorded in this paper, and had employed incisions in phlegmonous erysipelas at the Fever Hospital, adopted the practice with his usual discernment and promptitude, in Case 30, at the very outset of the inflammation. The narrative will be perused with interest, as exhibiting a severe attack of that formidable inflammation, which is caused by injuries received in dissection. It was suddenly and completely arrested by the incision. In Case 31 we have an example of a local affection precisely similar, although apparently of different origin, arrested in a manner equally decided by the same means. These cases are peculiarly interesting

from the early period at which the incisions were made, and their marked salutary influence. The beneficial effects of free incision, at the earliest period, in the inflammations, which occur so frequently in the fingers and hand, are known to every practitioner. They effectually prevent those serious consequences which the extension of inflammation in the hand and forearm so often produces, where this effectual measure is neglected. It is hardly necessary to allude to their well known influence in checking the progress of suppuration and sloughing of the cellular texture in carbuncular inflammations.

When erysipelas attacks the face, it is not attended with that serious inflammation of the subcutaneous structures which requires incisions. Moreover, the disease in this situation has a tolerably regular course, ending either in resolution, vesication, or desquamation; it should be treated therefore on the plan pointed out for simple erysipelas, under which I should arrange it. However, the abundant cellular structure of the eye-lids not unfrequently becomes the seat of more severe inflammation, proceeding to suppuration and sloughing, and even causing partial mortification of the skin. Here incision may be advantageously resorted to, as exemplified in Cases 20 and 21.

We may have in the scalp either simple erysipelas affecting the skin, and the texture exterior

to the aponeurosis, or a form of the complaint, which may be called phlegmonous, in which the cellular tissue under the aponeurosis is inflamed. The former is to be treated by the ordinary antiphlogistic means. In the latter there is at first a soft but considerable swelling, with slight discolouration of the integuments, which pit on pressure. Suppuration and sloughing soon come on, with great disturbance of the head, and violent fever; and these destructive processes spread over the whole head. The skin inflames and ulcerates at various points, giving issue to matter and sloughs. By having recourse to incisions at an early period we prevent the progress of this very serious affection, and the same proceeding is necessary at a more advanced stage, either to limit the suppurative and sloughing processes, or to provide a discharge for matter and large masses of dead cellular membrane. The advantage, or rather the necessity of incisions in this affection will be rendered obvious by a consideration of the local peculiarities, and does not require further explanation.

The limbs, especially the lower, are the most frequent seat of the affection, which is at least very uncommon in the trunk. After the incisions have been made, the part may be covered with warm fomentation cloths until the bleeding has ceased, when a warm bread poultice may be applied. If discharge does not soon take place from

the wound, it should be dressed, under the poultice, with lint thickly spread with the yellow basilicon ointment, or with some other stimulant. (Cases 22, 23. 25. 28.) When suppuration has already occurred, the matter finds a free discharge at the incision: large portions of the cellular membrane often slough, and come away with copious discharges of matter, and it is sometimes necessary to extend the incision, in order to promote their separation. (Case 29.) When this is at an end, and more particularly when the skin has been extensively detached by sloughing of the cellular membrane, pressure by bandage is very serviceable in promoting the healing process.

The incisions, when made during the existence of active inflammation, are followed by profuse bleeding both from arteries and veins, which probably has an important share in arresting the inflammatory disturbance. The benefit however cannot be wholly ascribed to this cause, for it takes place even when the loss of blood is much less; and it is so immediate, that we cannot refer it to the suppurative process which afterwards occurs in the surface of the wound. The relief has been ascribed to the removal of that tension which always exists in a greater or less degree; we observe, indeed, that the edges of the wound usually gape asunder, and that the surrounding skin not only loses its deep red colour, but soon becomes wrinkled on the surface; two changes which suf-

ficiently explain the great and sudden benefit usually produced by the incisions. The circumstance of the blood being directly taken from the inflamed part may account for its having an effect in lessening the inflammation, which would not be produced by taking a much larger quantity from the arm; and it will probably explain another fact, viz. that a very considerable bleeding in this way is not only safe but advantageous, when the circulation is so much reduced that general bleeding would be altogether inadmissible. This will be seen in some of the cases annexed to this paper (see Cases 25. 27, 28.); and it was remarkably exemplified in a patient whom I saw with Mr. Earle, by whom the details of the case have been already published *. This patient, who had pricked his finger in opening a body, was taken ill in the house of his father, an experienced and judicious practitioner, and was attended throughout by his brother, also in the profession, and by two very sensible and well-informed professional friends. Pain came on in the finger during the night after the accident, and the first phalanx had lost its vitality in the course of the next day. In spite of leeches, venesection, aperients, opiates, antimonials, &c. &c. inflammation spread from the finger to the shoulder with the most excruciating pain and the worst constitutional symptoms, such as entire want of sleep, de-

* Medical and Physical Journal, January, 1827.

lirium, brown tongue, altered countenance. On the sixth day Mr. Earle had informed me of this gentleman's danger, and that he did not expect him to recover. On the eighth day he said that he was much worse, and he requested that I would see him, not with the expectation that any thing could be done, but as a satisfaction to the friends, and some diminution of his own responsibility. The situation of the patient certainly justified the apprehensions thus expressed. The limb was greatly swollen, tense, bright red, and acutely painful from the hand to the shoulder; the pulse rapid and small, the countenance anxious and haggard. The treatment by incisions, or leaving the patient to certain death, seemed to me the only alternative that the case presented; and Mr. Earle readily acceded to my proposal of the former, although he said that he had had no experience of the practice. Three incisions were accordingly made; one in the arm, and two in the fore-arm. The limb having been laid in a folded sheet, was covered over by the bed-clothes, when, after some time, the patient was observed to become faint. It was now found that he had lost an enormous quantity of blood, and that a small artery required the ligature. The blood was carefully collected in a wash-hand basin, and was estimated by the father at three pounds and a half; he feels certain that it exceeded three pounds. Before the incisions were made he had given up all

hopes of his son's recovery; so complete and sudden was the relief they afforded, that in six hours after, he had discarded all ideas of danger. The cure, indeed, proceeded from this time uninterruptedly, and I believe that the motions of the hand and fingers were perfectly restored. The patient, his father, and brother, Mr. Earle, and the immediately attendant professional friends, are all convinced that he owes the preservation of his life entirely to the incisions. Mr. Wardrop saw the case a few days after they had been made.

As the free bleeding from the incisions is often of great advantage in relieving the overloaded vessels, and arresting the inflammation, it need not be checked so long as the pulse is unaffected by the loss of blood. But the great extent to which the hemorrhage may proceed renders it necessary that we should act very cautiously, especially in elderly persons, or in those whose strength is already impaired by the disease or previous treatment. The patient should be closely watched by the surgeon in such cases, until the bleeding has ceased. Should it become necessary to stop the further loss of blood, this may be readily accomplished by tying any bleeding vessels, by placing the limb in an elevated position, or by pressure. The necessity of the caution now inculcated will be rendered apparent by Cases 32 and 33. These, with the two following, namely, 34 and 35,

are all the instances that have come to my knowledge, of unfavourable termination where incisions had been employed.

Although this practice has been probably adopted heretofore, being incidentally alluded to by O'Halloran * and Pott † and more directly mentioned by Vogel ‡, we are indebted for its recent introduction into this country to Mr. Copland Hutchison, who strongly recommended it in a paper written expressly on the subject, first published in the Fifth Volume of the Transactions of this Society, and subsequently re-published, in a somewhat enlarged form, in his "Practical Observations in Surgery." In the latter work he says, "These incisions may be made about an inch and a half in length, from two to four inches apart, and varied in number from four to eighteen, according to the extent of surface the disease is found to occupy." || Since this multiplicity of cuts must be painful and alarming, it is important to know, as I have found by repeated experience, that a

* Complete Treatise on Gangrene and Sphacelus, 1765.

† Works, 1783, Vol. I. p. 22.

‡ "There can be no doubt, that in very acute erysipelas incisions into the part are more efficacious than any other measure, in giving issue to stagnant fluids, and dispersing the mischief. Attention ought to be paid at the same time to the state of the juices, and suitable internal remedies ought not to be neglected. In this way suppuration and other bad consequences may often be prevented." Handbuch, Vol. III. p. 358.

|| Second Edition, p. 118.

single incision carried through the middle of the inflamed part, in a direction parallel to the long axis of the limb, is quite sufficient. I have seen severe phlegmonous erysipelas of the entire leg and thigh, when the aspect of the limb from enormous swelling, general redness, and vesication, was really appalling, suspended in the most decisive manner by a single incision along the middle of the calf. (See Case 28.) Mr. Guthrie* has found that one or two long incisions accomplish every useful purpose, and has therefore adopted that plan. As the numerous short cuts, or the single longer incision will equally answer the end, the selection may be left in each case to the patient or the surgeon. The incision should divide the skin and the cellular texture down to the fascia; it is not necessary to penetrate the latter. A double-edged bistoury is the most convenient instrument for the purpose.

Mr. Hutchison has strongly recommended incisions in the early period of phlegmonous erysipelas, on the important ground of their efficacy in arresting the disease, and preventing the extensive suppuration and sloughing which cause so much mischief, and sometimes even loss of life. He had frequently seen at the Deal Hospital the injurious and fatal effects of the disease under the ordinary treatment; and he had the opportunity of con-

* On Gunshot Wounds, Third Edition, p. 108.

trasting with such results the effect of his own treatment, which was uniformly successful. Mr. George Young had employed the same method with equally favourable effect. "Having," says he, "frequently witnessed the great loss of time and the serious injury to the constitution of the patient, occasioned by delaying incisions until much matter has accumulated beneath the fascia, and having noticed that small openings (such as are usually made) do not admit the ready escape of pus, I have long been in the habit of making very free incisions, as early as I could detect fluctuation; and from this practice I have derived much quicker cures. But since I read your paper I have not waited until I could detect fluctuation; I have made free incisions when the diffused tense swelling, and general redness, with high constitutional irritation, have led me to conclude that the usual attempts at resolution would be fruitless. On these occasions I have, however, with one exception, always found some small quantity of pus; the incisions have bled freely, and the cure has been effected in a few days. In one instance only (it was in the forearm) I could not discover any pus: nothing but a stream of blood followed the incisions. The symptoms, which had been very severe, quickly subsided, and the wounds healed rapidly."* Others have recommended incisions at a more advanced period, for the purpose of dis-

* Letter to Mr. Hutchison, in his Practical Observations, p. 138.

charging matter*, or limiting the extent of suppuration.

* " Si l'empâtement de la partie fait reconnaître que la suppuration est formée, il faut sans attendre que des points partiels de fluctuation viennent indiquer les lieux où le pus s'est rassemblé, et pendant que ce liquide est encore infiltré dans le tissu cellulaire, pratiquer des incisions profondes et nombreuses, qui facilitent le dégorgement, font cesser l'étranglement dans les parties où le tissu cellulaire est bridé par les aponévroses, et préviennent autant que possible la gangrène de ce tissu." Roche et Sanson, Nouveaux Elémens, &c. Tom. II. p. 352.

" Si la gangrène s'est déclarée dans un ou plusieurs points d'un membre frappé par un vaste erysipèle phlegmoneux ; si le cerveau, l'estomac, ou l'intestin sont le siège de lésions sympathiques plus ou moins graves, débridez largement la peau enflammée, répétez la saignée, et combattez l'inflammation partout où la gangrène ne s'est pas encore établie. Les toniques, les antiseptiques, les cordiaux, les décoctions de quinquina, de polygala, &c. aggraveraient les lésions du cerveau et des organes digestifs. Le débridement et les émissions sanguines peuvent seuls arrêter les progrés de l'affection locale, qui a suscité et tend à entretenir les lésions sympathiques." Rayer, Traité des Mal. de la Peau, Tom. I. p. 123.

As soon as change of colour appears in the inflamed part, or any fluctuation is to be felt, Rust directs that incisions should be made, going to the bottom of the mischief, and followed up wherever it extends. In this way he says that the incisions will sometimes reach from the heel to the hip, and that the free discharge, thus procured, for matter and cellular sloughs, is the only way to arrest the further progress of the mischief, and save the patient's life. Magazin, Vol. VIII. p. 521.

CASES OF SIMPLE ERYSIPELAS.

CASE I.

Erysipelas of the Face, treated by venesection.

Francis Saville, æt. 46, was received into St. Bartholomew's Hospital, the 24th of July, 1826, in consequence of an injury of the hip-joint from a fall. He was directed to lie quietly in bed, and to have milk diet; a dose of calomel and jalap immediately; senna mixture if necessary. The joint became very painful, so that the slightest motion could not be borne. He was therefore cupped to sixteen ounces, and blisters were twice applied near the joint, from which he obtained great relief.

August 11th. He has erysipelatous inflammation of the right ear and side of the face: he is feverish, and has slight shiverings. The pulse is not much accelerated: there is great thirst, with hot and dry skin. (Venesection to sixteen ounces: four grains of calomel, and twelve of jalap immediately: a saline antimonial draught every six hours.)

13th. The inflammation has subsided on the right side of the face, but has extended to the forehead and left side. He is less feverish. The pulse is

still excited. (A dose of the senna mixture occasionally. Saline medicine continued).

16th. All appearances of inflammation are gone; but he complains of soreness of the scalp and forehead. (Medicines continued.)

20th. His health is now completely restored, and the hip-joint is so much better, that he can walk a little.

He left the Hospital on the 29th, with complete restoration of the affected part, and of his health.

CASE II.

Erysipelas of the Head and Face treated by venesection in the beginning, and afterwards by bark.

William Loveless, æt. 19, who has usually enjoyed good health, was admitted into St. Bartholomew's Hospital, for deafness, about the middle of June, 1827. He had moderate chronic enlargement of the tonsils, with slight superficial ulceration of the pharynx, some swelling of the cervical glands, and a few scaly eruptions on the body. There was reason to consider these symptoms syphilitic, and their treatment was begun on that supposition. In the course of a few days, however, and on the 28th of June, he was seized with a severe attack of

fever. He had pain in the head; furred tongue; hot and dry skin, with a strong and full pulse. The bowels had been acted upon by aperient medicine. I ordered immediate venesection to sixteen ounces: a saline antimonial draught every four hours.

June 29th. The head much relieved, but still in pain; little diminution of the other febrile symptoms. (To continue the medicine, and apply twelve leeches to the neck, the glandular swellings of which are larger and more painful.)

July 1st. The head easier, but not hitherto free from pain. He has had no sleep since the beginning of the attack. The heat of skin and other symptoms continue with little abatement. The tongue is much furred; pulse frequent and quick, but not hard. (Repeat the saline mixture. A dose of calomel and jalap immediately.)

2d. The febrile symptoms are rather diminished, but there is still much pain in the head. (Twelve leeches behind the ears: an aperient draught in the morning: continue the saline medicine with antimony.)

3d. Complains of drowsiness, but is in less pain. The pulse is excessively quick, and the tongue thickly coated with a dirty white fur on its middle and back part, the tip and edges remaining clean.

Erysipelatous inflammation has commenced in the left ear, which is much swollen and vesicated. (A dose of calomel and jalap. The saline draughts continued.)

4th. Tongue cleaner, and bowels freely open. The erysipelas of the ear is subsiding. The head painful, pulse full, quick, and upwards of 100. (Venesection to twelve ounces. Blood buffed and cupped.)

5th. The bleeding was repeated this morning to ten ounces. The blood was buffed. He passed a very restless night, and still complains of headach. The heat of skin and thirst are diminished. The pulse is 104, full, but compressible. The whole side of the face is red, swollen and partially vesicated. (The head to be shaved. Medicine continued.)

6th. He has slept a few hours, and finds his head much easier. The pulse is 116 and soft. (A pill containing two grains of calomel and five of James's powder, to be taken at night.)

7th. The erysipelas has extended over the nose, and subsided in the parts first affected. He has had no sleep. The tongue is foul. In other respects the same as yesterday. (Calomel and antimonial powder, two grains of each every six hours: saline draughts continued.)

8th. The bowels are quite open: the tongue is moister and rather cleaner: the pulse 100 and weaker.

9th. He has had no good sleep, and is very weak, lying with his limbs stretched out and motionless, and hardly attending to what is passing, or to questions put to him. The pain of the head is less severe: pulse 92, very small and weak: tongue foul: bowels freely open. The erysipelas has extended to the eyelids of the opposite side, which are swollen and closed. (Two grains of the sulphate of quinine every eight hours in infusion of roses.) Nine p. m. Pulse rather fuller and firmer: skin cooler.

10th. He is improved in every respect, has had a good night, and is free from head-ach. The erysipelas has extended to the scalp, but has subsided almost entirely on the face. The pulse is 72, but weak: tongue moister and not so foul: skin cool: bowels open. (Continue the quinine every six hours.)

11th. He is still better to day: his countenance is more cheerful, and his appetite is returning. The erysipelas has entirely disappeared.

13th. He is gaining strength rapidly. The pulse is firmer, but still weak. The tongue is moist and cleaner.

15th. Continues improving. The tongue is perfectly healthy, and the swelling of the tonsils and cervical glands has subsided.

23d. Since the last date he has improved considerably in health and strength. (Discontinue the quinine. A drachm of the sulphate of magnesia in infusion of roses thrice a day.)

He was dismissed from the hospital in good health on the 1st of August.

CASE III.

Erysipelas of the Face treated by loss of blood in an advanced period of the affection.

J. P. æt. 38, a cabinet maker, and hard drinker, was admitted into St. Bartholomew's Hospital, on the 2d of August, 1827, with erysipelas of the face, which had already lasted seven days, and had begun to desquamate. The forehead and face were tumid with erysipelas, and deep red; the eyelids swoln and closed. Vesications had existed at some points, and were now drying. There was pain of the head, with whitish and rather dry tongue. The pulse was feeble and did not indicate the necessity of depletion. (Cupping from the back of the neck. A dose of calomel and jalap. Saline draught with antimony, every six hours. The head to be shaved, and cold damp cloths applied to it.)

The pain of the head continued in the evening, when, as only six ounces of blood had been taken by cupping, thirty-six leeches were applied to the back of the head. He was much better on the following day, August 3, and continued improving till the 5th, when the head was again uneasy, and twelve leeches were applied. On the 6th there was a serious relapse of inflammation, the face being again swelled, the head in pain, the skin hot, the tongue white and dry. (Seven ounces of blood were taken from the arm: it was very sizy. He was freely purged, and ordered to continue the saline and antimonial medicines.)

7th. The erysipelas of the head has disappeared. The right leg, on which there had been an ulcer, is now inflamed, hot, and painful. (Eighteen leeches to the leg, and bread poultice.)

10th. The inflammation has entirely disappeared, and the patient may be considered well. He left the hospital two or three days after.

CASE IV.

Erysipelas of the Face, with Inflammation of the Conjunctiva, and of the Jugular Glands, treated by general and local bleeding.

Mary Callahan, æt. 20, was admitted into St. Bartholomew's Hospital, the 29th of November,

1825, having acute catarrhal ophthalmia of the right eye, with considerable swelling of the right jugular glands. The right palpebræ were red and swoln, and the side of the face was similarly affected in a slighter degree. She was feverish, and complained of head-ache. (Venesection to sixteen ounces, four grains of calomel and ten of jalap immediately; a saline antimonial draught every four hours.)

30th. Less feverishness. (Twelve leeches to the swelling of the neck, which is very painful.)

December 1st. The eye is less inflamed; pain in the head and neck continues. (Twelve more leeches to the neck.)

2d. The jugular glands of the left side are a little enlarged; those of the right remain considerably swelled and painful. (Eighteen leeches to the inflamed glands, and bread poultice.)

4th. Increased head-ach and pain of the neck came on last night. Twenty-four leeches were applied to the neck and temples. She is better in every respect to day. (Saline mixture with antimony continued.)

7th. The head-ach and swelling of the neck continue as before. (Cupping on the neck to twelve ounces.)

9th. The eye is recovered. The tumour on the right side of the neck diminished, and less painful; that on the left worse. Head-ach continues, with white tongue. (The head to be shaved, and cold lotion applied: leeches in the evening if necessary.)

10th. Erysipelas has appeared on the left cheek. Great pain in the head and limbs; pulse excited. She has taken three doses of the senna mixture, which have operated freely.

11th. There is more head-ach and general feverishness. (Cupping on the neck to twelve ounces.)

12th. The erysipelas has extended over the right cheek. (Repeat the cupping to sixteen ounces: calomel and James's powder, of each two grains, every four hours.)

13th. The bowels have acted freely. The erysipelas is much less vivid; and she slept better.

14th. The gums are affected by the calomel. The erysipelas is nearly gone, and the swellings in the neck are much less. (Discontinue the calomel and James's powder.)

26th. She has recovered rapidly, and is discharged quite well.

CASE V.

Chronic Erysipelas of the Head and Face, treated by general and local bleeding.

Mary Carter, aged 19, was admitted into St. Bartholomew's Hospital on the 26th of April, 1826. This patient, who is in service, acknowledges that she has been in the regular habits of drinking freely of gin and porter. She has suffered for seven years with disease of the nose (lupus). The ulceration, which has caused considerable loss of substance in the alæ nasi, and an aperture in the septum large enough to admit the end of a finger, has been cicatrized for some time; the surrounding skin exhibits patches of scurfy redness. A few days ago she had shivering fits, and afterwards head-ach, with heat of skin and erysipelatous redness and swelling of the face, which had increased so much by yesterday, that the eyelids were quite closed.

April 26th. There is great swelling with vivid redness of the head and face, occupying more particularly the forehead, temples, eyelids, and cheeks. The eyelids are completely closed. There is no inflammation of the fauces. She is hot and feverish, with severe head-ach, a small and rapid pulse; she has had no good rest for several days. (Fourteen ounces of blood taken quickly from the

arm produced fainting: it was neither buffed nor cupped. A dose of calomel and jalap was ordered, which acted freely on the bowels.)

27th. Continued pain in the head preventing sleep; pricking sensation with burning heat of the head and face; she cannot bear to move the head. The skin is hot and dry; great thirst; no appetite; pulse 126, hard and full. (Venesection to sixteen ounces; a dose of calomel and jalap, and afterwards a saline draught every eight hours. The blood flowed freely, and was buffed and cupped.)

28th. She was immediately relieved by the bleeding, and has passed a good night. The tongue is cleaner, and the pulse improved. (As there are still much heat and pain about the head, let the hair be cut off and cold lotion applied.)

May 3d. She is better in every respect; the redness and swelling are much less. (Continue the saline draughts; a draught of infusion of senna with sulphate of magnesia when necessary.)

4th. Is entirely free from pain; the redness of the cheek has disappeared, and she considers herself well.

5th. She experienced an attack of shivering last night, and became afterwards hot and thirsty.

She has great pain in the head, foul tongue, pulse small and 140. The redness and swelling of the face have returned. (Venesection to twelve ounces;—blood natural. An aperient draught immediately; saline medicine, with antimony, every six hours.)

7th. The redness and inflammation of the face are less; the pulse is small and frequent; she has had no sleep, but talked much and incoherently during the night, and has passed several stools involuntarily. She is very sick. (A draught containing ten grains of the subcarbonate of ammonia every six hours.)

8th. Is better to day. (Discontinue the subcarbonate of ammonia. To take calomel and antimonial powder, of each two grains, every eight hours.)

14th. She took six doses of the calomel and antimony, and has since been slowly improving.

18th. A relapse of the inflammation and pain in the head. It was doubtful whether matter had formed in one of the eyelids, which was greatly swollen, bright red, and acutely painful: a transverse incision through the skin and cellular membrane showed that suppuration had not taken place; but the inflammation and pain were greatly relieved by the cut. (Venesection to fourteen

ounces: the blood was buffed and cupped. To take four doses, each containing half an ounce, of the liquor antimonii tartarizati, at intervals of four hours.)

21st. A repetition of the tartrite of antimony as last directed.

23d. The face is still puffy and partially red. The tongue is coated, and the pain in the head continues. (Five grains of calomel every six hours.)

29th. She took four doses of the calomel, and has since taken aperient medicine with saline draughts. A dozen leeches were applied to the temples. She continues much the same, still complaining of severe head-ach. (To take four doses, each containing half an ounce, of the liquor antimonii tartarizati, at intervals of half an hour.)

30th. The antimony caused great sickness, which relieved her for a short time from the head-ache, but it soon returned. (Venesection to twelve ounces; blood natural.)

31st. She is easier to day, but still suffering from head-ach. (Half a drachm of the solution of tartrite of antimony with twelve minims of the tincture of digitalis in a saline draught, every eight hours.)

June 2d. In consequence of increased heat and pain about the head, she was cupped on the back of the neck to sixteen ounces. The tongue is very foul; the other symptoms are improved.

7th. She has taken several moderate doses of calomel during the last week, which have occasioned slight purging, without affecting the mouth. (Continue the calomel, two grains, with a quarter of a grain of opium every sixth hour.)

12th. The calomel and opium caused a sensation of weight on the stomach, and increased the head-ach; it was discontinued, and a saline aperient draught was taken three or four times daily. She is more feverish to day, and appears to suffer greatly from pain in the head. (Bleeding to deliquium. A dose of calomel and jalap immediately; saline antimonial draught thrice a day.)

13th. About twelve ounces of blood were taken, when faintness ensued; the blood was much buffed and cupped. She was very faint and ill for several hours after. The head-ache continues. The pulse is still excited, skin hot, and tongue foul. She is thirsty, and complains of shooting pains across the brow and forehead. She passed the night without sleep, and is now crying, and appears much distressed. (Eighteen leeches to the temples; cold cloths to the head.)

14th. She is better, and felt so much relieved by the leeches, that she wishes to have more applied. She slept well, and is in better spirits, but is not free from pain. The pulse is 85 and reduced to its natural force. (Discontinue the antimony as it causes sickness; repeat the leeches.)

15th. Twelve more leeches.

18th. Eighteen leeches to the head.

20th. A large blister applied yesterday between the shoulders gave great relief. She is now entirely free from pain, and considers that the leeches have been more serviceable than any of the other treatment.

27th. She has been gradually improving until yesterday evening, when a relapse of the pain in the head took place. Her countenance, which has been natural for the last week, is again swoln and bright red. The skin is very hot; pulse strong and frequent; tongue white and coated; bowels open. (A scruple of calomel divided into five pills; one to be taken every fourth hour.) Ten leeches were applied, as the head-ache increased in the evening.

July 3d. Continued head-ach with heat of skin, thirst, loss of rest and appetite. The face remains

unnaturally red. (Cupping on the neck to fourteen ounces.)

4th. The skin is cooler and general aspect improved, but the pain in the head is more severe. (Twenty-eight leeches were applied to the temples with great relief.)

10th. She is considerably improved in appearance, is free from pain, and feels well in every respect.

11th. She has a dull heavy expression of countenance with head-ach, excited pulse, and unhealthy white tongue. The bowels are quite open.

July 14th. The catamenia have been suppressed since she came into the hospital; previous to admission she always menstruated regularly. At the expected periods the pain in the head increases, and the circulation is more or less affected. On being asked whether she was with child, she denied in the most decided manner. There is a disposition to eruption of the skin of the nose, but the countenance is improved. Her rest and appetite are good.

23d. Violent head-ach, with general febrile disturbance, came on during the night. The face

is very red and swoln. A seton that had been made about a fortnight since, in the back of the neck, was immediately removed. (A dose of calomel and jalap.) In consequence of increased pain in the head, heat of skin, and inflammation of the face, cupping to fourteen ounces was necessary in the afternoon, and a dozen leeches were applied in the evening.

24th. She was much relieved by the cupping and leeches, and slept well afterwards. The redness and swelling of the face are diminished, and the pulse is natural. (A blister between the shoulders.)

August 3d. She has taken merely a dose of the senna mixture since the last date. Head-ach continues, and is more or less severe at different times. She is feverish to day, and has a foul tongue. (Twenty-four leeches to the temples; they gave great relief. A saline aperient draught occasionally.)

She was discharged on the 7th of August, feeling and looking quite well. In a fortnight after she came to the hospital, with every appearance of perfect health: menstruation had returned.

She was re-admitted on the 19th October, 1827, having continued in excellent health till a week ago, when her left eye inflamed, the face

swelled again as it had done before, and she became feverish. She has now acute inflammation of the conjunctiva, more particularly affecting the lining of the lower eyelid and that portion of the membrane which covers the inferior half of the globe: in the middle of the latter there is a small superficial ulceration with a whitish surface. The sclerotica is slightly inflamed; there is considerable pain, with copious lacrymal discharge, particularly on exposure to light. The nose is bright red; the lower eyelid and cheek are red and swollen. She has a frequent pulse, severe headach, foul tongue, and costiveness. (Twelve leeches to the left lower eyelid: calomel and jalap.) The leeches were repeated on the 28th and 29th, and saline draughts with Epsom salts and liq. antim. tart. were given.

30th. The inflammation of the eye and of the face are lessened, but there is still severe headach, preventing rest. (Venesection to sixteen ounces: medicine continued.)

November 3d. The ophthalmia and the erysipelas of the face are quite removed. She has been much more free from pain in the head till this morning, when it recurred violently with flushing of the face. (Venesection to eighteen ounces; blood buffed and cupped: calomel and pulv. antimon., of each three grains, at bed time; the saline medicine with Epsom salts and liq. antim. tart. continued.)

9th. Twelve leeches to the temples.

12th. Pain in the head continues, though somewhat relieved; pulse frequent and hard; tongue furred. (Venesection to sixteen ounces: medicine continued.)

15th. Cupping on the back of the neck to twelve ounces: a dose of calomel and antimonial powder at night.

19th. Much relieved by the cupping, and has been better until this morning, when pain and flushing of the head returned. (Twelve leeches to the temples: medicine continued.)

21st. Twelve leeches: five grains of Plummer's pill every night.

December 4th. She has improved considerably since the last report, till last night, when the headach returned with flushed face, foul tongue, thirst, and heat of skin. (Twelve leeches to the temples.)

10th. The tartar emetic ointment to be rubbed on the back of the neck night and morning.

27th. Numerous pustules were caused by the friction in the course of a few days, with relief of the headach; and the progress has been altogether

favourable till to-day, when the pain recurred with vivid redness of the face, foul tongue, and great feverishness. She was cupped to twelve ounces; and the evacuation was repeated on the 31st. She has continued the pills.

January 2d. She left the hospital by her own desire, being free from pain, with natural expression of countenance; regular bowels, and rather feeble pulse.

23d. She attended at the hospital in excellent health. She has a clean tongue, regular bowels, and menstruation, with good fresh colour and most healthy appearance. Her nose is of a vivid red and rather scurfy, as if return of the ulcerative affection were not improbable. Perhaps the increased activity in this part may have relieved the head.

CASE VI.

Erysipelas of the Head and Face, with Inflammation of the Throat, and great debility, treated by mild antiphlogistic means.

Ann Turner, æt. 23, was received into St. Bartholomew's Hospital on the 10th of August, 1826. She laboured under gonorrhœa; and in coming to and returning from the hospital, as an out-patient, a few days ago, she became completely wet through.

August 13th. The tongue is dry, and has a light brown glazed surface; the roof of the mouth is in a similar state. The soft palate and fauces are of a deep red colour, and covered with a thick viscid and tenacious mucus, which is difficultly dislodged even with the assistance of repeated gargling. The right ear and adjacent part of the cheek are swollen and red with erysipelas: vesications are observed in the former, and the meatus is so far obstructed by the tumefaction as to cause deafness. The pulse is extremely rapid and feeble; there were thirty-eight pulsations in a quarter of a minute as she sate in a chair after her throat had been examined. She is so weak, that she cannot stand without support. The tongue is tremulous, and obeys the will imperfectly. The bowels have been confined two days. (Four grains of calomel with ten grains of jalap immediately; and afterwards senna mixture; five grains of subcarbonate of ammonia in a draught, every four hours; and a little port wine largely diluted, if the state of debility should require it.)

In the evening, when the bowels had been freely opened, a state of stupor with increased determination of blood to the head was found, and the insensibility seemed approaching to the state of coma; the pulse still rapid and feeble. (The hair to be cut short, and the head constantly covered with cold lotion; a blister between the shoulders; the stimuli not to be given.)

11th. The left ear and cheek are erysipelatous, and the patient is completely deaf. The bowels have been moved three or four times. (The senna mixture and cold lotion repeated.)

12th. She has had four motions, and is more feeble to-day. (The sub-carbonate of ammonia to be taken every four or six hours, and wine and water if necessary.)

13th. The erysipelas has spread across the face and over the head. Six doses of the sub-carbonate have been taken, and one table-spoonful of wine in water this morning; the latter seems to have caused injurious excitement. (Wine discontinued: the subcarbonate of ammonia continued.)

14th. She passed a restless night, and has had five motions. (Five grains of the hydrargyrus c. cretâ every eight hours, the subcarbonate continued.)

15th. She slept well and is free from pain. The pulse is quieter but feeble, erysipelas not extending; she has had six motions. (Leave off the hydrargyrus c. cretâ: continue the ammonia.)

16th. The throat is quite well, the tongue moist and nearly clean, the erysipelas subsiding, bowels moved six times. (Two grains of the sulphate of

quinine in infusion of roses every four hours; to take four doses.)

21st. The face and head have desquamated, and the patient is well—she has taken no medicine for the last four days.

The advocates for the use of bark and wine in erysipelas would probably have considered this a fit case for that plan of treatment. I felt doubtful, in the first instance, what course ought to be adopted, and gave conditional directions for the management of the patient. In spite, however, of the depressing circumstances to which she had been previously exposed, as well as of the supposed evidences of debility which she exhibited on her admission, stimuli were obviously injurious, and she derived great benefit from repeated alvine evacuations.

CASE VII.

Erysipelas of the Face, consequent on an operation, treated by venesection.

Mr. G. æt. 61, who had passed twenty-eight years in the East Indies, had an intractable ulceration, with indurated base and margin, near the external angle of the eye. It had lasted some years, and I removed it in the end of last year (1826). The wound, which was attended with

considerable loss of substance, inflamed; and the neighbouring integuments, being naturally red, and easily fretting into sores, were involved. The inflammation, although considerable and obstinate, slowly subsided, the parts healed, and the cicatrix has remained sound. Lower down, and in front of the ear, a firm prominent lump has since formed, equal to a middle sized walnut, raising the skin, which is thin and consolidated to the surface, into a detached projection moveable on the subjacent parts, with a few red vessels on its surface, and a partial excoriation affording a discharge which forms the yellow incrustations. Near its base, and on the parotid, a tumour is felt under the skin, of the size and shape of an almond, apparently glandular. I removed both the cutaneous and sub-cutaneous tumours on the 19th of June, 1827. Remembering the inflammation on the former occasion, I had given aperient medicine, and enjoined a suitable diet before the operation, and attended to the same points afterwards. Inflammation however slowly developed itself; the bowels were not open on the 24th and 25th, during my absence from town, and in the evening of the latter I found Mr. G. very alarmingly ill with erysipelas of the face on the operated side. The integuments of the cheek, eye-lids, temple, and forehead were swelled and bright red; the eye-lids closed. The entire head was flushed and very hot, the pulse was frequent, but not very strong; the skin burning hot; the tongue

foul with hot and offensive breath; the functions of the sensorium had been gradually impaired through the day. Mr. G. was apparently unconscious of what was passing; he muttered vaguely, but answered no questions. A difficulty of swallowing had been experienced in the morning, and had gradually increased, so that he could not now swallow at all. There were convulsive catchings of the limbs. I took from the arm two pints of blood by measure, with immediate relief of the most urgent symptoms. As it flowed, the heat and redness of the face became less, and the oppression of the sensorium was so much diminished, that he answered questions readily and clearly. The power of swallowing was also restored, and I administered twelve grains of jalap with four of calomel. The blood was strongly cupped, and covered by a thick yellow coat so tough, that it was difficultly penetrated with the handle of a spoon.

26th. He has slept well, and is much better today. The bowels have been once copiously relieved. The wound is healthy, and secretes good pus. (A draught of infusion of senna with manna and sulphate of magnesia; a saline draught with antimony every four or six hours.)

27th. He passed a good night, but the bowels have not been relieved. (Six grains of calomel with sixteen of jalap immediately. A draught with

two drachms of magnes. sulph. and half a drachm of liq. antimon. tart. every eight hours.)

28th. Three or four copious dark and offensive motions since yesterday: proceeding most favourably to-day. The skin of the face is desquamating; the appearance and discharge of the wound most healthy; copious yellowish discharge from the palpebral conjunctiva of both eyes. (Continue the draught.)

29th. Has been freely purged. The local and general inflammatory symptoms are completely removed. The appearance of the wound, which has at no time been bad, is now as healthy as possible. The discharge from the eye-lids continues. The pulse is rather low, and there is some feeling of lowness. (Discontinue the purging draught: a draught with two grains of quin. sulph. three times a day; broth and beef tea.)

July 4th. The cuticle of the face nearly renewed; the wound granulating and cicatrizing in the most healthy manner; pulse quiet and steady; tongue clean; appetite good. (To leave off medicine, and resume ordinary diet.)

This gentleman returned to his residence in the country in two or three days, and has continued perfectly well.

CASE VIII.

Erysipelas of the Scalp, consequent on a wound, treated by copious bleeding.

Mr. T., about 50 years of age, a robust man, rather inclined to corpulence, of very florid complexion, accustomed to good living, and of full habit, was thrown from his horse, and received a slight wound of the scalp, in the very hot weather of 1826. Feeling little inconvenience from the accident, after its immediate effects had subsided, he continued his usual mode of living, and went for two or three days from his residence to the city, a distance of four or five miles, in opposition to the advice of his surgeon, who, aware of his sanguine constitution and plethoric state, had recommended him to remain quietly at home and live low for a few days. Severe inflammation of erysipelatous character came on, commencing at the wound, extending generally over the scalp and face on the same side, and causing considerable swelling, with closure of the eyelids. In the course of four or five days he was thrice bled, to the amount of twenty ounces on each occasion, and was subjected to the other parts of the antiphlogistic plan. When I saw him, at the end of this time, the scalp on the left side of the head was slightly red, and raised into a general elevation, apparently by matter diffused through the cellular texture under the aponeurosis near the wound, and

by serous effusion in the circumference. There was a small opening through the inflamed and swollen scalp on the left parietal bone, the original wound; and another, about three inches further back, which had been made to let out matter. Through these a well formed pus could be slowly squeezed. The face was red and swollen with erysipelas: the tongue was of a dirty white all over and rather dry: the pulse full, but not very strong.

As the openings were manifestly inadequate to the discharge of matter, which could be pressed towards them from a considerable distance, and as the suppuration was extending under the aponeurosis, I laid the two apertures into one, dividing an artery which bled freely. This was allowed to bleed on, as I thought a further loss of blood necessary, although the patient was averse to the measure. The bleeding was continued until faintness came on, when the artery was tied: the blood, which had been caught in a basin, amounted to more than twenty ounces. (Two grains of calomel with two of James's powder every six hours. Saline medicine, with saline aperients: milk diet.)

Mr. T. slept well, and was much better on the next day, the tongue being particularly improved. He continued the medical treatment with slight variations: the inflammation and suppuration of the scalp were arrested, but the erysipelatous redness and swelling passed over to the opposite side of

the face. In about a week he began to take the subcarbonate of ammonia, and he recovered quickly and completely.

CASE IX.

Erysipelas of the Scalp, consequent on a wound, treated by repeated applications of leeches.

John Hyde, 11 years old, was thrown from a horse and pitched on his head, receiving a severe blow on the right parietal bone, and a slight cut of the scalp. He went on well for eight or nine days, when he became feverish and delirious in the night. Blood was taken from the arm, and the head was poulticed, but it began to swell, and he was consequently brought to St. Bartholomew's, about a fortnight after the accident, on the 22nd October, 1827. The wound was quite healed: the forehead, temples, nose, and eyelids were greatly swollen and œdematous: there was no effusion under the aponeurosis of the occipito-frontalis. The patient had head-ach and was feverish: pulse 90: tongue furred, but moist. (Eight leeches to the forehead; bread poultice; three grains of calomel and six of jalap immediately, and a purging draught two hours after.)

23d. The local and general disturbance are not lessened; pulse 100. (Fifteen leeches; a saline draught with liq. ant. tart. gutt. xv. and magnes.

sulph. 3ss. every six hours; three grains of calomel at night.)

24th. Bowels freely open; pulse 90. (Medicines continued.)

25th. Inflammation increased; pulse 120. (Eighteen leeches; calomel and antimonial powder, of each three grains at bed time. Draughts continued.)

26th. Eighteen leeches were again applied today, after which there was a decided improvement in all the symptoms. On the next day (27th) the pulse was 80.

31st. He has gone on favourably till this day, when a relapse occurred; pulse 120; tongue furred and brownish. (One grain of calomel, and two of antimonial powder every eight hours; the saline draughts continued; eight leeches.)

November 4th. Much better. (The calomel and antimonial powder discontinued.)

6th. Pulse 80; tongue moist and clean; bowels regular. (The saline draughts are continued.)

12th. He has been well for some days.—Discharged.

CASE X.

Erratic Erysipelas of the Trunk, treated by a large venesection, and subsequently by the internal use of the subcarbonate of ammonia.

Edward Percival, 15 years old, was admitted into St. Bartholomew's on account of a punctured wound in the perineum the 26th of December, 1827. The injury, which was attended with no serious symptoms, soon got well.

1st of Jan. 1828. A small circular patch of inflammation, with slight thickening and considerable pain, has formed on the left side of the abdomen near the umbilicus. Twelve leeches were applied and a purgative was given. The pain was less on the following day, and the leeches were repeated: the affection had disappeared on the 5th.

12th. A large patch of erysipelatous inflammation has made its appearance on the left side of the chest and abdomen. The skin is of a tolerably bright red, painful to the touch, with a sense of burning, not tense. It can scarcely be said that the affected part is swelled, the inflammation being apparently confined to the cutaneous texture. The pain extends to the axilla, where there are two inflamed glands. Pulse frequent

and strong, skin hot, tongue dry, bowels open, no appetite. Twenty ounces of blood were taken from the arm; it was cupped and slightly buffed. (A saline draught with liq. ant. tart. ℥i. and magnes. sulph. ℥i. every six hours. Bread poultice to the inflamed part.)

13th. The pain and fever have been lessened by the bleeding. The inflammation extends. Tongue white, with a brownish streak towards the middle and rather dry. The inflamed part is thickly beset with pustules about as large as a pin's head; their surface is flattened, so as to cause no inequality of the cuticle; the contained fluid is yellow. (Three doses of calomel, each three gr. at intervals of three hours.)

14th. The calomel repeated.

15th. The inflammation is extending towards the neck and back; desquamation has commenced on the part first affected. (Ammon. subcarb. gr. v. in mist. camphor. ℥i. every three hours.) The improvement which had already begun continued progressively under the use of the subcarbonate, and he persevered with this medicine till he was well. The inflammation gradually extended over the entire trunk and back of the neck, being still confined to the skin, the parts first affected desquamating in proportion as fresh ones were inflamed. The skin was dark red, hot, and painful,

but exhibited, in the progress of the affection, vesications instead of the minute pustules which were observed in the original patch of redness. These vesications were closely set, various in size, and contained a clear, nearly transparent fluid. Although the erysipelas reached the pelvis and the scapulæ, it did not extend to the extremities.

He was discharged on the 26th, having discontinued medicine for some days, and perfectly recovered health, strength, and good looks.

CASE XI.

Erysipelas of the Trunk, caused by an operation on the anus; treated by venesection.

Mr. Edwards, of Queen Street, Cheapside, who had been in attendance on this patient before I saw him, has kindly favoured me with the following narrative of the case.

" Mr. R. M. aged 55, of a full habit, had been for many years the subject of fistula in ano. His medical friends had considered the discharge to be salutary, in a person of his constitution and habits of living, and had accordingly recommended him not to submit to an operation for its cure. With the exception of this local complaint, Mr. M. en-

joyed good health for some years. Relying on his good constitution, he disregarded the opinion of his medical advisers, and placed himself under the care of a gentleman, who professed to cure such cases without cutting. He was subjected for two months to various local applications and proceedings, which were attended with great pain; and, on the 26th of July, 1826, something was introduced into the rectum, which in a few hours produced intolerable suffering with inflammation round the anus. For the relief of the former, it was necessary to remove the cause; for the latter, leeches, fomentations, and poultices were employed to little or no useful purpose. In this state of things I was requested to see the patient, whom I found seriously ill. He had a quick pulse, hot skin, thirst, nausea, pain in the head, and restlessness. On exposing the nates, I found active erysipelatous inflammation round the anus, extending across the left hip towards the abdomen, and covering the upper third of the left thigh. I ordered calomel with the compound extract of colocynth and afterwards a saline aperient draught; saline draughts in the state of effervescence every three or four hours; and fomentations of warm water to the affected parts. I pursued this plan of treatment till the 2d of August, when finding the patient becoming worse and the inflammation extending in every direction, I took eighteen ounces of blood from the arm, and gave a draught every

six hours containing sulphate and carbonate of magnesia. The blood was strongly cupped and buffed, the buffy coat being three-eighths of an inch thick in the centre of the cupped surface.

" On the 3rd I repeated the bleeding to fifteen ounces, added one quarter of a grain of emetic tartar to each draught, and directed the use of poppy fomentations to the inflamed surface.

" The inflammation was still extending on the 4th, though not more alarming in its appearance about the parts which it had originally occupied. The great extent of the inflamed surface, and its continued spreading towards the head, made me anxious about the case, and I requested that Mr. Lawrence should be sent for. He ordered a repetition of the venesection to about twelve ounces, two grains of calomel and two of James's powder in a pill every four hours, and the constant employment of fomentations, with the decoction of poppies and chamomile flowers."

The inflammation extended no further; the patient became better: the means above mentioned with saline draughts were continued for a few days, and complete recovery soon ensued. Mr. M. soon regained a state of robust and perfect health, which he has enjoyed without interruption to the present moment, the fistula discharging as before.

CASE XII.

Erysipelas of the Groin, from the use of a bougie, treated by venesection.

John Dainton, æt. 47, was received into St. Bartholomew's Hospital on the 28th of September, 1826. Five days previous to his admission, and two or three days after the employment of a bougie for a stricture in the urethra, he had a shivering fit, and felt otherwise very unwell. Redness, swelling, and pain came on in the groin, and continued increasing. The groin, and neighbouring parts of the abdomen and thigh are now of the brightest red, covered with minute vesications and acutely painful. Pulse 120, full and strong; tongue white and furred; great thirst. I directed immediate venesection, a dose of calomel and jalap, a saline aperient draught every eight hours. Milk diet and bread poultice.

29th. Twenty-four ounces of blood were taken; it was much buffed and cupped; is much better today; pulse moderate; tongue still white and furred. As the medicine did not act upon the bowels, a glyster was given this morning, and he has since had several copious stools which have afforded great relief. (Calom. gr. ij 6tâ quâq. horâ. Continue the salines.)

Oct. 1st. Improved in every respect: the pain and inflammation are considerably diminished; the bowels are open; the mouth is slightly affected by the mercury. (Discontinue the calomel, repeat the saline draughts.)

3d. Several of the vesications have burst, and discharge a thin serous matter in considerable quantity. An abscess formed in the groin, attended with partial sloughing of the cellular membrane. (Magnes. sulph. 3j ex infus. rosæ ter quotidie.)

16th. The ulcer in the groin is healthy, and the process of cicatrization is proceeding favourably. (To take the infusion of bark with dilute sulphuric acid three times a day.)

30th. Discharged cured.

In this and in the following case, the erysipelas did not extend beyond the part first affected.

CASE XIII.

Simple Erysipelas of the Arm, treated by venesection.

Mr. B. about 30 years of age, a free liver, with an habitual white tongue, was under my care in

the winter of 1825—6, for a chronic swelling in the axilla, apparently glandular, and referred by himself to some local irritation. The tumour was firm and incompressible, the integuments became of a deep red, and slowly ulcerated, exposing a dirty yellowish white mass of firm consistence, apparently deprived of vitality, and separating from the surrounding parts by a slow ulcerative process. Although he was going on well, he submitted reluctantly to restrictions in diet; and feeling himself, as he said, low, he one day drank a pint of ale with his dinner, and a pint of port wine after. He passed a dreadful night after this intemperance, and was extremely ill the next day. When I saw him on the second morning, (8th January,) the upper half of the arm, the shoulder, the integuments over the scapula and the breast were the seat of acute simple erysipelas. The skin was universally of a bright fiery red, with hot burning pain, and thickly covered with vesicles containing a clear yellowish fluid. The pulse was strong, full, and frequent, the countenance flushed. There was great pain of the head, sickness, and total loss of appetite. He had taken salts, which had produced a copious motion, without the slightest relief. I immediately drew 30 ounces of blood from the affected arm; it was buffed and strongly cupped. I ordered that the inflamed part should be kept *constantly* covered with warm flannels wrung out of poppy fomentation, and that he should take every six hours two grains

of calomel with the same quantity of James's powder.

11th. The fever was completely arrested by the venesection, which however did not cause syncope; and the fomentation, which has been continued almost uninterruptedly, entirely removed the local heat and pain. The calomel and James's powder have been continued, with an occasional purgative, when necessary. The erysipelas has not extended beyond its original seat, and is there declining. The appetite is returned.

18th. He experienced no further inconvenience from the erysipelas. A firm tough substance, of irregular shape and unequal surface, considerably larger than a hen's egg, and excessively fetid, came away to-day. The cavity soon closed, and Mr. B. got well without any further interruption.

CASE XIV.

Erratic Erysipelas appearing during the cicatrization of a severe lacerated wound, treated by venesection.

Wm. M'Donald, æt. 16, came into St. Bartholomew's Hospital on the 30th of Sept. 1826. He had been discharged from the hospital only a week since, having had a lacerated wound of

the arm, which was nearly healed. He has since been indulging himself with a very full diet, and has used the arm freely. Violent inflammatory fever, with erysipelas of the arm, has taken place.

September 30th. I ordered immediate venesection to twenty ounces: senna mixture, and afterwards saline draughts with antimony.

October 1st. Redness and inflammation rather increased. (Repeat the venesection to fourteen ounces: three grains of calomel every eight hours.)

19th. The erysipelatous redness gradually spread over the head, the trunk of the body, the opposite arm, and the lower limbs, subsiding in one part, and spreading successively to others. He was kept on low diet. The saline medicine was continued without the antimony, the latter having made him very sick; occasional purgatives were employed, and he gradually recovered.

The extent and continuance of the disease, and the consequent reduction of strength excited great alarm for this patient; but the expression of the countenance, and more particularly the state of the eye, as well as the voice, were natural throughout. The disturbance of the system was always inflammatory during the whole progress of the case; the pulse excited; skin hot and dry; tongue

white. Neither bark, ammonia, nor any other stimulus could be borne: every trial of such means, however cautious, aggravated the disorder. The recovery of strength, on the cessation of the inflammation, was very rapid.

CASE XV.

Erysipelas of the Thigh, treated by venesection.

Charles Hooke, 21, was admitted into St. Bartholomew's Hospital, on the 13th of April, 1827, for chronic inflammation of the left knee.

On the 1st of June, when the ulcerations of four moxas were in a perfectly healthy state, and discharging moderately, a slight degree of erysipelatous redness was observed on the joint, and extending towards the groin, with enlargement of the femoral glands. There was no constitutional disturbance. He fell down the next morning and hurt the affected knee, experiencing much pain in it, which continued till the 4th, when he was attacked with head-ach, accompanied with heat and dryness of skin, frequency of pulse, white and dry tongue, and diminution of the urinary and intestinal secretions. The whole inside of the thigh was of a bright red, slightly swoln, and acutely painful. (Venesection to twelve ounces, which produced syncope: the blood was buffed

and cupped. Four grains of calomel with ten of jalap immediately: a dose of the compound senna mixture two hours afterwards. A saline draught, with half a drachm of liq. antim. tart. every six hours. Cold saturnine lotion to the inflamed part.)

The head-ach and other feverish symptoms were immediately removed by the bleeding; the lotion and the diaphoretic medicines were continued till the 7th, when the skin, previously occupied by the erysipelatous inflammation, had resumed its natural appearance.

CASE XVI.

Erysipelas of the Leg from a slight wound, treated by venesection.

Martin Mac Coy, æt. 20, a stout Irish labourer, met with a bruise on the shin, with slight laceration of the integuments, which he entirely neglected. He was admitted into St. Bartholomew's Hospital on the 12th of July, 1827. The whole leg was slightly swoln, and bright red, with considerable burning pain. The tongue was white, the circulation not much disturbed, nor was there head-ach. (Venesection to twenty ounces; four grains of calomel with twelve of jalap immediately. Two drachms of sulphate of magnesia, with half

a drachm of liq. ant. tart. in a saline draught, every four hours. Saturnine lotion to the leg, cold.)

13th. Venesection to ℥xij.; which caused fainting.

14th. Venesection to ℥xvi.

16th. Twenty-four leeches to the leg, and afterwards bread-poultice. The saline draughts with the antimony and salts, were continued for a few days, but the inflammation was completely arrested. The patient left the hospital before the end of the month; he set out for his native country on foot, and had reached Bristol, when his leg again became inflamed and painful; he found his way back to the hospital, with a very serious relapse of inflammation, not only occupying the whole leg as before, but extending to the lower half of the thigh. By active antiphlogistic treatment, including venesection and leeches, the inflammation was again quickly stopped.

CASE XVII.

Erysipelas of the Leg, in a Case of compound fracture, treated by venesection.

Thomas Smith, æt. 24, was received into St.

Bartholomew's Hospital, on the 18th of March, 1826, with a compound fracture of the right leg. He had been thrown from a cart, the wheel of which had passed over the limb, and remained upon it for some time. There was a large lacerated wound of the leg, about five inches in length; the tibia was laid bare, and nearly insulated in the whole extent of this laceration, and broken through so close to the ankle, that extension of fracture into the joint was very probable. I considered amputation advisable, and strongly recommended it to him, but he refused to submit to the operation. The limb was placed on its outside, in a broad splint, and the wound covered with a bread and water poultice. Eighteen leeches were applied on the following day; he was confined to low diet, and took such opening medicines as the bowels required, the limb being constantly poulticed. Under this plan, the case proceeded most favourably; the local inflammation was less than could have been expected, no abscesses formed, probably in consequence of the free external discharge, afforded by the extensive wound, and the constitutional disturbance was not considerable. About a fortnight after the accident, he had an attack of pain in the side, and was bled from the arm, with immediate and complete relief, syncope having come on when eight ounces of blood had flowed. In the beginning of May, the wound was granulating and cicatrizing, in the most healthy manner, when he had a severe attack

of inflammation in the limb, in consequence, as I suspected, of some irregularity in diet; for he had submitted, with great discontent, to the low regimen which his case had required, and had been very desirous of being allowed to take meat and beer. He was seized with shiverings, sickness, loss of rest and appetite; the sickness, accompanied with copious bilious vomiting, was a marked symptom. I ordered him the tartrite of antimony, in a large quantity of fluid; it operated freely on the stomach and the bowels: the warm water, which he drank in large quantity, was thrown up, deeply tinged with bile. On the following day (18th May), he was in a high fever, the vomiting and purging having given him no relief. The pulse was full and hard, the skin hot and dry, the countenance flushed, the head in great pain, the tongue white and rather dry. The wound had completely lost its healthy character, having a yellowish appearance, and discharging a thin sanies, instead of good pus; the surrounding integuments were of a bright red, and erysipelatous redness and swelling occupied a considerable portion of the leg. The lymphatic glands of the groin were swelled. (He was immediately bled to 20 ounces, and the blood was strongly buffed and cupped; eighteen leeches were applied to the leg in the evening, and the bread poultice, which had been left off for simple dressing and roller, was resumed. Active aperients and saline mixture were ordered.)

19th. The general and local inflammatory symptoms are nearly the same as yesterday, and the sickness is still very troublesome. (Venesection to 16 oz.: the blood had the same appearance as before. A common enema, with 6 oz. of infus. sennæ; saline draught in the state of effervescence, with 5 drops of tinct. opii, every four hours.)

20th. The inflammation of the limb, the febrile disturbance, and the sickness, are diminished; but the pulse is not sufficiently quiet. (Repetition of the venesection.)

21st. Sixteen ounces of blood were taken from the arm yesterday: the crassamentum was firm, partially buffed and cupped. He passed a better night. The inflammation and pain are greatly reduced; the discharge from the wound is more healthy; the pulse is soft and quiet, but the sickness is not quite gone. (A pill containing one gr. of calomel, with four of extr. colocynth. comp. to be taken every two hours; and a drachm of magnes. sulph. in mint water, on the intermediate hours.)

22d. He is free from pain and sickness; the limb has regained its former healthy condition, and he is better in every respect.

28th. Venesection was repeated with much ad-

vantage, on account of a slight recurrence of feverish symptoms.

The processes of restoration went on subsequently, without any interruption. A copious growth of granulations covered the large exposed surface of the tibia, and the wound cicatrized without exfoliation. He left the hospital perfectly well early in July.

CASE XVIII.

Erratic Erysipelas consequent on Vaccination, treated by antiphlogistic means at first, and afterwards by bark. Communicated by Mr. F. Bullin.

"A female infant, four months old, was vaccinated on the 9th of August, from a child in every respect healthy, and from a pustule as fine as I ever saw. The lymph was inserted in two different places in each arm.

"14th. I observed a small areola of inflammation, about the size of a sixpence, round the inferior pustule of the left arm; the pustule itself was contracted, and very different from the other three, which were coming forward well. I simply remarked that it was not a genuine vaccine pustule, and did not deem it of sufficient importance to warrant interference.

"15th. The pustule much enlarged, and inflammation extended, occupying a circle of an inch and a half in diameter. The child restless, with hot skin, very quick pulse, and furred tongue. Aperient and diaphoretic medicines were administered, and Goulard's wash with spirit of wine was applied to the arm.

"16th. The inflammation is extended over the shoulder and scapula behind, the clavicle and pectoral muscle in front, and descending below the elbow. But immediately round the pock which caused the mischief, though the parts were still swoln, the skin had resumed its natural colour. The child still feverish, hot, and restless, bowels freely opened. (Saline medicines continued, syrupus papaveris occasionally: four leeches to the arm and shoulder, which bled freely: poppy fomentation.) In the evening the child looked pallid and anxious, and was still restless, unless the opiate was administered.

"17th. The inflammation has reached the hand; at this time it occupies the whole of the fore-arm and lower end of the upper arm, the middle of the latter being white. The shoulder and scapula are better, but the inflammation has travelled across the chest. (Two leeches: opiate and fomentation continued.)

"18th. Mr. Lawrence saw the child. I had

applied two more leeches on the fore-arm, which looked much more pale. The child was restless and hot; bowels very free. (Six grains of extract. cinchon. resinos. blended with milk, to be given every six hours. The opiate if the restlessness be considerable. Saturnine lotion.) In the evening the arm was still paler but yet swoln; chest more extensively inflamed; shoulder better.

"19th. The child is altogether better to-day. The cinchona has been useful. The arm and shoulder are less inflamed, but remain considerably swoln. The inflammation is extended across the chest nearly to the right shoulder. The bowels are freely relieved; the pulse is less quick; the skin still hot. (Cinchona, opiate, and cold lotion continued.)

"20th. The upper arm is swoln and semitransparent from effusion into the cellular tissue. Fore-arm better, but the hand and fingers are red and swoln; left side of the chest recovering; the inflammation spreading over the right. Less heat of skin; tongue cleaner; restlessness diminished, so that less of the opiate is required. She took at one time half an ounce of the syrup of poppies in twenty-four hours.

"The same medicines were continued till the 23d, after which the inflammation became less active, and gradually subsided in the left arm, leav-

ing the whole limb œdematous. It descended on the chest very slowly as far as the scrobiculus cordis; it went down the whole of the right arm very slowly, and terminated in the fingers about the 28th. In the last four or five days, sulphate of quinine was administered with decidedly good effect, the effused fluid being quickly absorbed.

"During the whole of this period the other three pustules enlarged gradually up to the usual time, and then died off. They excited little or none of the accustomed inflammation, being probably influenced by the antiphlogistic measures at first adopted. The irregular pustule had completely died away, but, on the 29th, to my great surprise, it began again to swell, and gradually enlarged for the space of six days, when it terminated with the usual areola of inflammation and every other character of a genuine vaccine pustule, except that the inflammation was not quite so vivid as I have usually seen it."

CASE XIX.

Erratic Erysipelas, apparently from contagion.

—— Greenfield, 3 years old, was admitted into St. Bartholomew's Hospital on the 3d of February, 1828, having at that time simple erysipelas of the foot and ankle. The skin was bright red and pain-

ful, but not vesicated. The patient was not much indisposed. The erysipelas, preserving the same character of simple cutaneous inflammation without vesication, gradually crept up the limb and ended on the pelvis about the tenth or twelfth day. The inflammation disappeared below in proportion as it attacked the sound skin above; however, the back of the foot continued red, swoln, and painful, and became the seat of two small abscesses, when the inflammation ceased to spread. Aperient and saline medicines were given, and a grain of sulphate of quinine three times a-day at the decline of the erysipelas. Cooling washes and poultice were employed to the part. The cuticle of the entire limb desquamated in large thin flakes.

The father of this child had been in the hospital for an affection of the head, for which a seton had been placed in the back of the neck. After he had become an out-patient, erysipelatous inflammation came on round the wound and quickly spread over the face, head, and ears. He was again admitted into the hospital and returned home in a fortnight, the inflammation not being quite at an end. A large abscess formed on the front of the neck and opened. His wife and child slept with him; the leg of the latter had been scalded, but was nearly healed. After sleeping with the father a slight blush came round the wound, and extended upwards and downwards. At the end of

two days the child was brought to the hospital. On the next day the wife became affected with head-ach and fever, and she had inflammation of the fauces, with swelling of the tonsils, for which she was also received into the hospital. Leeches and other means soon removed these symptoms, and in a few days she went out nearly well. Her husband was still very ill, but the erysipelas had ceased. She now occupied a separate bed in the same room with him. The soreness of the throat became worse on the following morning, and she returned to the hospital in the course of the day. She now became affected with erysipelas of the face, by which the eyelids were closed. The symptoms were not severe; the head was shaved and cold was applied. She soon got better and left the hospital on the 18th.

CASES OF ERYSIPELAS TREATED BY INCISION.

CASE XX.

Phlegmonous Erysipelas of the Eyelids, treated by incisions.

A girl of the town, about 25, robust and of full habit, was under my care in St. Bartholomew's Hospital in the summer of 1825. The whole face

was affected with erysipelas, but the palpebræ were enormously swoln, deep red, and shining. There was high inflammatory fever, with violent delirium at night. She was twice largely bled (the blood having the most inflammatory character) with great relief of the general symptoms, but without diminishing the inflammation and pain of the eyelids. On the second day after her admission an incision was made along the whole breadth of each eyelid, and through the entire depth of the inflamed and swoln cellular structure, which had begun to slough, and contained matter diffused through its cells. Considerable portions of cellular membrane were subsequently detached, and there was some sloughing of the integument, leaving a large ulcerated and ragged surface of the swoln lids, from which subsequent deformity might have been apprehended. The parts however granulated, and healed rapidly, and so completely that not a vestige of the extensive mischief remained. During the progress of healing a large abscess formed in the right temple, apparently rather deep seated. When I opened it, a considerable cellular slough came out with good matter, and the part healed quickly.

This patient came to the Hospital again in December. She had had another attack of erysipelas in the face, from which she was then recovering. The palpebræ were still puffed: the cheeks, forehead, and temples were desquamating.

CASE XXI.

Erysipelas of the Face; partial suppuration of the upper eyelid treated by incision.

Mr. R., a medical student, about 24 years of age, had a violent attack of erysipelas of the face, apparently from exposure to cold air, after being in a very crowded and hot room. The redness was vivid, with considerable tumefaction, particularly of the eyelids and forehead. There was great pain, head-ach, restlessness at night, and general feverishness. I ordered a large venesection (twenty ounces were taken, and the blood was buffed), free purging, then salines with antimony, and low diet. He was much relieved by the loss of blood, and felt his head so much better, that he wished to have the bleeding repeated the same evening, but the friend, who attended him, would not comply with his desire. On the next and the following days he was better; the swelling and inflammation were nearly gone. The symptoms, although still inflammatory, did not absolutely require the repetition of venesection, and he was averse to it from a groundless notion that his constitution would not bear bleeding: he ought however to have been bled again.

He took, on the second day, four doses of calomel, each containing three grains, at inter-

vals of four hours, and then a draught of infusion of senna with sulphate of magnesia, which operated very freely. In two more days he indulged himself with some mutton broth, under the supposed necessity of supporting his strength after the evacuations he had undergone, and thus brought on a relapse; but the inflammation was nearly confined to the right upper eyelid, which was much swoln, of a deep red, without fluctuation, and acutely painful. He was freely purged with calomel followed by the senna draught. On the next day the swelling and pain had greatly increased, but no fluctuation could be perceived. He urgently requested that the part should be opened to relieve him from the severe suffering. I accordingly made a transverse incision through the skin and tumid cellular substance, extending the entire breadth of the lid. About a tea-spoonful of white and almost milky fluid escaped. The cellular substance was swoln, condensed, and had a whitish appearance. This incision produced complete relief; the swelling lessened, the inflammation stopped, suppuration ensued, and some disorganised cellular structure was separated. A large ulcerated surface was thus left, which however healed rapidly, without leaving any trace of the mischief that had occurred.

CASE XXII.

Phlegmonous Erysipelas of the Arm from venesection, treated by incisions.

John Jennings, æt. 30, a strong and healthy man, came to the hospital on the 1st of November, 1825. He was bled a week ago in consequence of an injury from a fall. On the day following the bleeding there was slight redness round the orifice of the wound, but it did not increase. Yesterday, having recovered from the effects of the accident, he resumed his employment, that of loading wagons. The arm became swoln and painful in the evening, and he passed a sleepless night.

November 1st. There is great swelling on the palmar aspect of the fore-arm, quite altering the figure of the limb: it begins near the wrist, and reaches a little above the elbow. The skin of the swoln part is bright red, firm, and painful. The inflammation is acute, and obviously affects the subcutaneous tissue as well as the skin itself. Two red lines (inflamed absorbents) extend in front of the arm to the axilla. He has a flushed countenance, hot skin, and violent head-ach. Pulse hard, full, and 120. (Bleeding to twenty ounces: a dose of calomel and jalap, and afterwards saline medicine, with antimony.)

2nd. The blood was natural. Eighteen leeches were applied to the arm in the evening. The limb is more swoln to-day, and the pain in the head continues. The bowels have been freely opened. (Repeat the bleeding to twelve ounces, and the saline draught with antimony.) No inflammatory appearance in the blood.

3d. General symptoms improved. The arm is less inflamed, but still very painful. (Twenty-four leeches.)

4th. Is free from head-ach. The fore-arm remains swoln and painful. (Twenty-four leeches.) The leeches (two dozen) were repeated in the evening. As the bowels have not been evacuated, let him take magnes. sulph. ʒj in each dose of the saline medicine.

5th. The treatment has relieved the constitutional symptoms, but has not stopped, nor materially influenced the local disorder. The redness, swelling, and pain continue, but the inflammation has not extended beyond the parts first affected. Below the opening of the vein is an indistinct feel of fluctuation. A free incision was made at this part, and a table-spoonful of imperfectly formed pus was discharged. The cellular tissue was yellow, spongy, and in some parts firm, with a purulent appearance. Another incision was made in the

fore-arm, and the cellular substance was found in the same diseased state. Three or four incisions, each of about as many inches, were made in the skin and subjacent tissue, meeting in a point at the middle of the swelling. The cellular structure exposed by these incisions exhibited the same marks of inflammation and tendency to slough throughout. (Continue the medicine: a bread poultice to the part.)

6th. The tension, pain, and redness in the palmar aspect of the fore-arm are relieved; but about the elbow and back of the arm the inflammation and swelling are increased, and have extended. Two incisions were made above the elbow, each being about four inches in length. The cellular tissue was in an unsound state, but not so much changed as appeared in the first incisions.

7th. He slept well last night. The integuments, both of the arm and fore-arm, are free from inflammation, and of their natural colour. Very little pain remains. As the pulse is quiet, and he complains of weakness, he was ordered a little wine and water occasionally.

8th. Is better, but gets no good rest. (A drachm of the tincture of hyoscyamus at night. The incisions dressed with the unguent. resinæ flavæ, spread on lint, and a linseed poultice over it.)

9th. Slept more comfortably. (Repeat the hyoscyamus at night.)

10th. The hyoscyamus appears to have affected his head;—let it be discontinued.

11th. In all respects better. (To continue as before.)

17th. The cellular membrane, exposed by the incisions, has sloughed extensively, and come away in large, ragged, light brown, dirty looking shreds, some of which have been discharged from under the neighbouring skin of the fore-arm. In this way nearly all the subcutaneous tissue, from the elbow to the wrist on the inner or front aspect of the limb, has separated. Two or three incisions of the undermined skin have been necessary. Similar, but less extensive separations have taken place from the incisions above the elbow. A granulating surface of the most healthy character and progress has succeeded. General symptoms perfectly favourable. (Treatment, local and general, continued.)

21st. The arm dressed and rolled. (Poultices and wine discontinued.)

December 9th. Cicatrization of the extensive ulcerated surface advancing most rapidly. General health quite restored.

1826. Jan. 1st. In consequence of indulging in meat and beer on Christmas day, the arm became inflamed, and the ulcerated surface assumed a foul yellowish appearance. The loss of sixteen ounces of blood from the arm, a dose of calomel and jalap, and reduced diet, immediately relieved these symptoms. The cure is now proceeding favourably.

9th. The wound being much reduced in size, and in the most favourable state, and the general health excellent, he is discharged to attend as an out-patient.

April, 1827. He was admitted into the hospital for lumbar abscess. His arm, which has remained quite soundly healed, is perfect in its form and motions.

CASE XXIII.

Phlegmonous Erysipelas of the whole Arm and Fore-arm, supervening on injury to the elbow, treated by incisions.

Thomas Nason, aged 53, was admitted into St. Bartholomew's Hospital on the 29th of November, 1826. This patient, who is a carpenter, and of a spare habit, fell and struck his elbow on the pavement three days ago. No uneasiness followed until the second day, when swelling and considerable

pain came on; they increased on the following day.

Nov. 29th. A bright red and painful inflammatory swelling, distinctly circumscribed, extends from the elbow down the outer half of the fore-arm. There is a slight laceration of the integument over the olecranon, extending into the bursa, from which several drops of thin serous (synovial?) fluid are discharged on pressure. General health not disturbed. (Twelve leeches to the part, fomentation, and bread poultice afterwards. Four grains of calomel and ten of jalap immediately, and a dose of senna mixture four hours afterwards.)

30th. The inflammation considerably extended on the fore-arm, pulse excited, yet compressible. (Venesection to sixteen ounces from the affected arm; a saline antimonial draught every six hours; fomentation and poultice continued.)

Dec. 1st. The blood taken yesterday is considerably cupped, and has a thick and tough buffy coat. The inflammation, which has extended to the wrist, and along the upper and back part of the arm to the axilla, has all the characters of phlegmonous erysipelas. The patient has passed a restless night, and is in much pain and very feverish to-day. I pointed it out to the pupils as a

well-marked case of phlegmonous erysipelas, observing that extensive sloughing of the cellular membrane would inevitably ensue, unless the progress of the affection could be checked; and that the only means of accomplishing this object would be the treatment recommended by Mr. Copland Hutchison, by free incisions through the inflamed parts. I mentioned that repeated experience had shewn me the great advantages of this treatment, which would probably prevent suppuration and sloughing in the present instance; but that it was equally advantageous, after those processes had commenced. I therefore made two cuts with a scalpel through the skin and cellular substance, in the whole length of the inflamed part, from above the elbow nearly to the wrist; one of these was twelve, the other ten inches long. The exposed cellular membrane was inflamed and thickened; in one of the cuts it was loaded with effusion of a dusky hue with small portions of yellow colour. The wounds bled freely, and all redness of the limb disappeared.

Dec. 2d. The bowels have not been opened for the last twenty-four hours; the patient has consequently passed a very restless night, and is feverish to-day, with a furred and white tongue, much inflammation and pain of the limb. The cellular membrane is decidedly sloughy at some points, and a small portion of the integuments has

sloughed. (A dose of calomel and jalap immediately, and the senna mixture every two hours, until the bowels shall have been freely opened.)

3d. He was much purged yesterday and during the night, and is much better to-day; the inflammation is subsiding. (Fifteen grains of Dover's powder at bed-time, if the purging should continue.)

4th. The bowels became quiet, and the Dover's powder was not taken. He had a good night. The tongue is cleaner. The redness of the skin has completely disappeared. The secretion from the wounds being deficient, they were directed to be dressed with the yellow basilicon ointment spread thickly upon lint; and the parts were then covered with linseed poultice.

5th. Copious healthy secretion from the wounds. There is general weakness with a low pulse. (Infusion of bark with dilute sulphuric acid thrice a-day.)

11th. Most favourable progress in all respects. There has been partial sloughing of the cellular substance and skin on the inside of the arm. The wounds are healing rapidly. He was shortly afterwards directed to attend as an out-patient, the air and confinement of the hospital appearing to

interrupt his general health, and impede the progress of cicatrization.

CASE XXIV.

Erysipelas of the Arm succeeding to fever, treated at the Fever Hospital by incisions. Communicated by Dr. Tweedie.

" An Irish labourer was admitted into the Fever Hospital on September 3, 1827, with very mild symptoms of continued fever. He had slight head-ach, foul tongue, hot skin, thirst, and watchfulness; and on the day following his admission, he became dull and somewhat incoherent, and passed his stools involuntarily. These symptoms in the course of six days yielded to general and local measures, and on the 10th of September he was reported to be convalescent. Next day, however, I found there was considerable tumefaction of the right arm, extending from above the elbow to the wrist and hand: the skin was very red, hot, and painful; the tongue coated, and the pulse towards 90; but he had no head-ach. Twelve leeches were ordered to the arm, and afterwards a spirit lotion, containing acetate of ammonia. He was also freely purged. On the following morning the pain was somewhat relieved, but the redness and swelling continued. The skin was warm; tongue dry; pulse 96. Eighteen leeches were

applied; the lotion and purgative repeated. The leeches bled profusely, but next day the whole arm was more swoln, and the pain evidently increased. He had passed a restless night. I directed three incisions to be made through the skin and cellular membrane of the arm. After the pain produced by them had ceased, he found himself greatly relieved, and spoke in strong terms of the ease he had obtained from the operation. The arm was enveloped in a bread and water poultice. On the following day his pulse was 84; skin cool; the swelling, pain, and redness had nearly gone. The limb was poulticed for a few days, and as the swelling which remained was soft, and evidently œdematous, the limb was subjected to pressure by adhesive stripes and bandage. In a few days he left the Hospital at his own request; but sooner than I recommended, as the incisions had scarcely healed."

CASE XXV.

Phlegmonous Erysipelas of the Hand and Arm, after amputation of the finger, treated by incision.

James Cossan, a thin sallow man, 67 years of age, was admitted into St. Bartholomew's Hospital, on the 10th of May, 1827, with disease of the right fore-finger.

May 12th. I removed the finger, with a portion of its metacarpal bone. He was confined to milk diet, and the bowels were regulated by aperient medicine.

14th. The whole hand and part of the fore-arm are inflamed and swoln. He is restless and feverish, with foul tongue and constipated bowels. The wound, which is nearly united, has no unfavourable appearance. (Four grains of calomel and twelve of jalap immediately; the senna mixture afterwards; a saline draught every six hours; twelve leeches, fomentation, and poultice to the part.)

17th. The inflammation and swelling are increased, and occupy the whole fore-arm. The bowels are daily acted upon by senna mixture. (Venesection to sixteen ounces, from the inflamed arm; the blood was highly buffed and cupped.)

18th. Twenty-four leeches to the arm, which is more swoln and painful. (Fomentation and poultice continued.)

20th. The inflammation is subsiding in the hand, but extends up the arm: the parts about the elbow are very tense and swoln, bright red, and acutely painful. (Twenty-four leeches to the inflamed part.)

21st. The leeches caused slight sickness, with great weakness. The inflammation has almost entirely left the hand, but is increased and considerably extended above the elbow. I made an incision about four inches long through the skin and cellular membrane over the olecranon. A small quantity of pus mixed with blood was discharged. He has a small weak pulse, and is very feeble. (Two grains of sulphate of quinine in infusion of roses thrice a day. Six ounces of wine daily.)

22d. He took only a portion of the wine, as it made him thirsty and feverish. The inflammation is extended to the shoulder, and the whole arm is of a bright red colour, very tense and swoln, and extremely painful. He has an anxious and very unfavourable expression of countenance. I made a longitudinal incision, about six inches in length, through the skin and cellular membrane in the upper and back part of the arm, and another, about three inches long, over the head of the radius. No pus was discharged, but the sides of the incisions presented an unhealthy appearance, as if in an incipient state of suppuration. About six ounces of blood were lost by the incisions.

23d. The tension and pain were immediately relieved by the incisions, the inflammation and swelling are reduced, and the countenance is improved. He took six ounces of wine yesterday.

25th. A moderate incision was made through a small formation of matter at the upper and inner side of the arm. The pulse is fuller and less frequent, and the general symptoms are improved.

29th. Progressive but gradual amendment: there is sloughing of the cellular membrane exposed by the incisions, and great discharge from the wounds. There is also a small slough of the skin at one part of the arm. (The wounds to be dressed with the yellow basilicon, and poultices continued over the dressings.)

June 1st. He complains of great pain in the wounds. (Discontinue the yellow basilicon, and apply the simple cerate on lint with poultices over it.)

4th. There is extensive sloughing of the cellular membrane; large dirty ragged shreds have come from the wounds, leaving the skin undermined. The integuments are completely separated from the muscles at the back of the arm. There is very little sloughing of the skin, and that at one place only, at the upper and inner side of the arm. The hand and fore-arm have been rolled for several days. (Increase the wine to twelve ounces daily.)

8th. All appearances of inflammation are gone. (The whole arm to be dressed and rolled.)

July 19th. The wounds have all healed slowly, but uninterruptedly, and the ulcerated surface caused by sloughing of the skin at the upper and inner part of the arm is gradually healing. His general health and appearance are improved. (The sulphate of quinine to be discontinued, and the wine reduced to six ounces daily. Senna mixture if necessary.)

29th. He left the hospital quite recovered.

This patient was in great danger when the incisions were made; indeed, most of those who saw him considered his situation hopeless. I feared that he might sink under the loss of blood consequent on the incisions, and therefore made only one cut in the first instance (on the 21st of May), which produced but little relief. Very decided benefit resulted from the two incisions made on the following day, and the more free discharge of blood which they occasioned. This case likewise shews that the affection cannot be stopped by venesection, and that leeches, even when very freely employed, are comparatively inefficacious.

CASE XXVI.

Phlegmonous Erysipelas of the Leg and Thigh treated by incisions.

Mary Mason, 19 years of age, came to St. Bar-

tholomew's Hospital on the 26th of July, 1827. This young girl, who had always enjoyed good health, was seized on the evening of the 21st with shivering, succeeded by general fever. The integuments over the right knee became at the same time very tense, red, and painful. The inflammation was chiefly confined to the neighbourhood of the joint, until the following day, when it spread to a considerable extent up the thigh and down the back part of the leg. It has continued increasing from that time, and has been attended with considerable feverishness, depriving her of rest and appetite. She has been confined to bed, bled once, and has taken medicine daily, but without benefit.

July 26th. The whole lower extremity is greatly swoln, so as to be much larger than the opposite limb; and the superficial veins are distended; with the exception of the latter circumstance, no alteration is observable on the front and inner side of the leg and thigh. The swelling of the foot is œdematous and pits on pressure. The whole calf of the leg, and the outer and back part of the thigh, in its lower half, are of a dull red colour, somewhat tense, and with a firm brawny feel, clearly indicating that the adipous and cellular tissue, as well as the skin, is inflamed. The cuticle is not raised at any part either by serous or purulent secretion. The whole limb is painful, but the red and indurated parts are more particularly

so on pressure. The circulation is excited, the skin hot, tongue white over its whole surface, and the mouth rather dry. She has no appetite and does not sleep, being free from head-ach except at night. The knee can be moved without pain; there is no inflammation of the joint, nor of the bursa on the patella.

I made an incision through the integuments and adipous membrane, over the middle of the calf. The cellular and adipous tissue were red from distension of vessels, but not otherwise changed. About six ounces of blood flowed from the incision. (Fomentation and bread poultice to the leg; a dose of calomel and jalap immediately, and of the senna mixture four hours after. A saline draught every six hours.) In the evening she complained of great pain in the thigh, which was more swoln and indurated. The leg had been much easier since the incision. Forty-eight leeches were applied on the inflamed part of the thigh.

27th. The inflammation has entirely subsided in the leg, leaving the integuments of the calf free from tension and redness. The affected part of the thigh being still red, indurated, and painful, I made an incision, about eight inches long, through the middle of this part, down to the fascia. The adipous membrane was, as in the leg, redder than natural; the cellular tissue connecting it to the fascia was of a yellow colour at two or three

points, but without containing any matter. A few ounces of blood flowed from the wound. Feverishness continues; pulse 120 and rather full. (Bread poultice to the wounds; saline medicine with antimony. An aperient draught daily.) Nine, P.M. Pain about the wound. Pulse 132 and full: restlessness. (Venesection to twelve ounces: blood not buffed.)

28th. She has passed a quiet night, but without much sleep, and is in all respects much better today. The incisions are suppurating; the redness, tension, and induration are gone; the skin is pale, soft, and wrinkled. Pulse 116 and soft. (Saline draught without antimony. A pill containing calomel and antimonial powder, of each two grains, every sixth hour.)

August 7th. The case has proceeded most favourably. The portions of cellular tissue in the upper incision, which looked yellow, sloughed, and some large shreds were separated, leaving excavations under the skin of three or four inches in extent. The whole of the wounds speedily assumed a healthy granulating surface, discharging thick yellow pus in large quantity, particularly in the situations from which the cellular sloughs had been detached. The limb has been rolled for the last four days, and the healing process is advancing rapidly. On the evening of the 1st she had an attack of head-ach and feverishness, for which

it was necessary to bleed to eight ounces. She was quite recovered on the following morning. She was discharged from the hospital quite well on the 5th of September.

CASE XXVII.

Phlegmonous Erysipelas of the Leg treated by incision.

Michael Young, æt. 50, was received into St. Bartholomew's Hospital on the 3d of April, 1827. This patient, who is the driver of a cabriolet, and much addicted to drinking, as might be inferred from his sallow unhealthy appearance, was exposed to cold last February, and has not been well since. The leg has become inflamed during the last week.

April 3d. He has inflammation of the skin and cellular membrane of the right leg in nearly its whole length and circumference. The part is swoln and generally firm, with a softer feel at some points. The skin is bright red, for the most part tense and shining, but covered partially with minute vesications. The tongue is foul, pulse 85 and feeble, and the countenance anxious and contracted. I made an incision through the skin and cellular tissue, the whole length of the inflamed part. About forty ounces of blood flowed

from the wound; some pus was discharged from the lower part. The bleeding stopped in an hour, when a poultice was applied. An active aperient was ordered afterwards; saline antimonial draughts.

4th. The redness and swelling are considerably lessened, and the pain is almost entirely removed. The pulse is feeble and reduced to 76. He was slightly delirious in the night, but slept tolerably well. (Five grains of the subcarbonate of ammonia every six hours.)

8th. He has been improving for the last three days, having taken a few ounces of wine daily. The bowels have been kept open by a rhubarb draught occasionally. There is a plentiful discharge from the wound, and an appearance of suppuration in another part of the leg.

9th. An incision, about two inches in length, made through the skin and cellular substance, where suppuration had already commenced. (Discontinue the ammonia. To take six ounces of wine, and the infusion of bark with sulphuric acid.)

16th. He has continued improving in health and strength. The first incision is healing rapidly. There has been partial sloughing of the skin and cellular texture near the ankle; two incisions, about two inches long, were made at this part.

27th. The first and largest incision is nearly healed, and the other wounds are proceeding favourably.

May 1st. The leg has been rolled for the last day or two. The wounds are healing, with copious healthy discharge.

4th. Slight swelling and redness of the skin about the wounds. (A poultice to the part.)

28th. The swelling and redness soon subsided, and the limb has since been strapped and rolled. The process of cicatrization is very nearly completed. He has been able to get about with crutches during the last week.

30th. Discharged cured.

July. He attended two or three times in the course of this month to show himself. The leg is quite sound, and he has regained nearly the full use of it. He has lost the unhealthy sallowness of countenance which existed on his admission, has gained flesh considerably, and has every appearance of perfect health.

CASE XXVIII.

Phlegmonous Erysipelas of the Leg and Thigh in a pregnant woman, supervening on ulcer, and treated by incision.

Mary Harper, æt. 36, was admitted into St. Bartholomew's Hospital on the 18th of December, 1826. She has been subject to an ulcerated leg for a considerable time; she was in the hospital about a month since, and was then discharged, the ulcer being almost healed. It continued nearly in the same state until about a week since, when she was attacked with cold shiverings and pain in the head. On the following morning, the ankle was inflamed and painful; the inflammation gradually extended to the leg and thigh; the leg became much swoln, and acutely painful. She applied poultices, and took aperient medicine; but, as the inflammation and swelling continued to spread, she came to the hospital this afternoon.

December 18th. The whole foot, leg, and thigh are enormously swoln from phlegmonous erysipelas. The inflammation, which extends from the foot to the groin, is chiefly of a vivid red; there is considerable tension of the leg, with vesications over nearly its whole surface, as well as on the lower half of the thigh, some of which have burst,

and others contain a yellowish serum. She is suffering great pain; the pulse is weak and frequent; tongue coated, but moist; bowels constipated. She is in the sixth or seventh month of pregnancy; and was so cold and feeble, when she reached the hospital, that it was necessary to give her wine and water. I saw her about eight o'clock in the evening, and made an incision through the skin and cellular membrane, over the middle of the calf, extending from the ham to the heel. A small quantity of pus was discharged at one part of it; the cellular membrane was at other parts tolerably healthy. Twenty-four ounces of blood were collected from the incision. (A dose of the senna mixture immediately. Fifteen grains of Dover's powder two hours after. Fomentation and bread poultice to the limb.)

19th. She passed a comfortable night, and is in much less pain to-day. The inflammation of the whole limb, has considerably subsided, and the vivid colour and tension of the skin are lessened, more especially in the leg. (A saline draught every six hours. Continue the Dover's powder at night. Fomentation. The unguentum resinæ flavæ to be applied on lint to the wound; the entire limb to be covered with a bread poultice.)

20th. The inflammation, swelling, and redness of the limb are much reduced, and the general symptoms improved. She complains of weakness.

(Two grains of the sulphate of quinine in infusion of roses, thrice a day.)

21st. Still better to-day; a copious healthy secretion from the wound; pain quite gone; countenance perfectly natural.

23d. Continues improving. The pulse is less feeble, and the tongue clean. The swelling of the limb is diminished, and the redness and inflammation are quite gone.

27th. Progressive improvement in all the symptoms. The wound is remarkably healthy. The skin of the thigh and of the leg has desquamated. Pulse natural. (Discontinue the quinine draughts and Dover's powder. A dose of the senna mixture, if necessary. The leg to be rolled.)

She left the hospital on the 6th of January with a perfectly sound and useful limb, and her health and strength completely restored.

This is the most formidable case of phlegmonous erysipelas that I have seen, in reference both to the intensity and extent of the inflammation. When I contemplated the immense swelling of the entire limb up to the groin, with the vivid redness and vesications of the skin, the acute pain, and the firm feel of the swelling, and considered further the advanced state of pregnancy, I appre-

hended that the termination would be fatal whatever treatment was adopted. The speedy and effectual relief afforded by the incision, and the rapid recovery from a condition of so much danger, illustrate very strikingly the advantages of this treatment. Under any other course of proceedings I feel convinced, either that the patient would have died from the immediate extension of the local and general disturbance, or have been exposed to nearly equal danger from extensive suppuration and sloughing.

CASE XXIX.

Phlegmonous Erysipelas of the Leg and Thigh, from a graze of the skin, treated by incision.

J. C., the clerk of an eminent barrister, leads a very laborious, but chiefly sedentary life, and indulges freely in drinking, being more particularly fond of spirits. On the 5th of June, 1827, he slipped in treading on a grating, and fell, slightly grazing the skin on the inner side of the left leg, below the knee. The injury was so inconsiderable, that he paid no attention to it, pursuing his ordinary avocations and mode of living. On the 9th, the part became painful, but he went to chambers, and was closely employed there from the morning till midnight. Redness and swelling came on the next day (the 10th); he went out a short dis-

tance in a coach, and then remained quietly at home. The swelling, inflammation, and fever increased, until I saw him on the 13th, and the febrile disturbance was so considerable, that he had been delirious on the preceding night. No efficacious measures had been hitherto adopted. A few leeches had been applied on the 12th, their application having been followed, according to the remark of the medical attendant, by increased swelling and redness; and a cold wash had been used.

June 13th. There is an irregular abrasion of the cuticle on the inside of the leg. The knee, leg, and foot, are swoln and red, the integuments being tense, from general and great tumefaction of the cellular and adipous tissue, and firm to the feel, except at the seat of the accident, where there is an obscure sensation of fluid. The redness is vivid, and the heat great, along the inner side of the limb, where a few groupes of minute yellow pustules are observable, and acute pain is experienced, even on slight pressure. The limb, although swoln and feeling firm in its whole circumference, is not so red nor painful on the fibular side. The inner two-thirds of the thigh exhibit a similar firm and painful swelling, with bright redness and fiery heat, nearly to the groin, where the absorbent glands are slightly enlarged. The pulse is full and strong; the skin hot and dry; the tongue white, with a narrow red edge, and

rather dry; the mouth dry, with constant thirst. There is head-ach, and a few clusters of herpetic vesicles have formed on the lips.

The great inflammatory swelling of the whole limb, the very acute inflammation, occupying so large a part of its surface, and reaching to the groin, the serious febrile disturbance of the constitution, and the previous intemperate habits of the patient, made me regard the case as one of great danger; the character and seat of the affection pointed it out as a proper instance for the treatment by incision, while the period of the disorder was favourable to that plan, inasmuch as no considerable suppuration nor sloughing had yet occurred.

I accordingly made an incision through the skin and cellular membrane at the seat of the accident, prolonging it over the inner edge of the tibia, down to the foot. A table-spoonful of thin whey-like fluid escaped from the neighbourhood of the injury, issuing from an irregular excavation with spongy sides. A little white pus came out of the cellular texture at two other points. A second incision of similar length was made over the middle of the calf. About thirty ounces of blood flowed from these incisions, producing an approach to faintness and great alleviation of the pain, heat, and general feverishness. The divided textures

were preternaturally red, but no sloughing was observed at any point. (A dose of calomel and jalap immediately: saline draught with antimony every four or six hours: fomentation and bread poultice to the part.)

14th. He passed a good night, having slept for some hours, and is much better to-day. The redness, swelling, heat, and pain of the limb are lessened, but the inner half of the thigh is still red, swoln, firm to the feel, and hot. The tongue still white and dryish; thirst; strong and full pulse. (Venesection: calomel and jalap repeated: saline and antimonials continued.)

15th. Fourteen ounces of blood were taken; it was strongly cupped, and covered with a tough yellow coat. General symptoms improved. A good night. Tongue still white, and pulse rather strong. Cuticle separated from nearly the whole inflamed surface of the leg. (Repeat the venesection. Two grains of calomel with the same quantity of James's powder every fourth or sixth hour. Continue saline medicine, fomentation, and poultice.)

16th. Eight ounces of blood were taken, when faintness came on; it was buffed and cupped like the former. Five doses of calomel and antimony have been taken, and the bowels have been freely

opened. The pulse is soft and quiet, the skin cool; the limb quite free from pain. The tongue is still white. (Omit the calomel and antimony; copious purging having been produced.)

18th. Fomentation and poultice continued. Calomel and antimony were resumed yesterday, and six doses taken. Great improvement in all respects, so that he can bear being got out of bed to-day. The incisions, which have been dressed with the yellow basilicon, are discharging freely a healthy pus. The cellular substance has partially sloughed on one edge of one cut, and the integument has perished to the size of a shilling. Thick healthy pus can be pressed out at two or three points of one incision. Soft quiet pulse; tongue much cleaner; good rest. The inflammation is completely stopped above the knee, the part lately inflamed being finely wrinkled. Thick white pus mixed with cellular sloughs was discharged by an incision of three inches carried in the interval between the two former incisions. (Discontinue the calomel and antimony, and resume them to-morrow. Continue saline medicine, fomentation, and poultice.)

20th. Another rather extensive incision was necessary in consequence of further suppuration and sloughing in the lower part of the thigh. Large masses of sloughy cellular membrane have separated, leaving the edges of the wounds ex-

tensively undermined at some parts, and there is copious healthy discharge. (Dry lint; poultice. Saline draughts.)

23d. The edges of the wounds gaping widely in consequence of the discharge of sloughs, which are succeeded by a granulating surface of most healthy character. (Dressing and roller.)

25th. Continued favourable progress. A little hardness above the knee, with some tenderness; flow of matter into the wound on pressure.

July 2d. Slight blush of redness on the inside of the thigh, with some pain. Copious discharge of thin matter at the upper end of the wound, particularly on pressing the red part. A director goes up four or five inches. The cavity is laid open in its whole length by a free incision.

4th. Redness and pain of the thigh gone. Quiet and steady pulse, good appetite and rest.

August 13th. The restorative processes have gone on uninterruptedly and most favourably: the wounds, which have had the most healthy aspect and discharge, have granulated and diminished considerably. He has got up now for some weeks, and has begun to go with crutches, being able to perform all the motions of the limb.

CASE XXX.

Inflammation of the Hand, caused by an injury received in dissection, treated by incision.

The subject of the following case was Dr. Dill, the resident medical officer of the Fever Hospital, who has kindly favoured me with the following narrative.

" MY DEAR SIR,

" AT your request I do myself the pleasure of sending you the following case, of which you are at liberty to make whatever use you may think fit.

" Upon the evening of the second day, after having inspected the body of a female, who had died of puerperal peritonitis, I felt some uneasiness in the hand, accompanied with slight stiffness of the wrist; but, not aware of having sustained any injury in either, the circumstance was regarded as unimportant. After retiring, however, for the night, the rigidity gradually increased, and the uneasiness soon amounted to pain. Still I apprehended nothing, and shortly fell asleep; but about the middle of the night I awoke in agony, and, to my utter astonishment, found that the back of my hand had swoln to a

very considerable size, was tense and inflamed, and that the glands of the axilla were enlarged and exceedingly painful. The whole arm was stiff and tender; it felt very hot, and the slightest motion could scarcely be endured. The excruciating pain, the rapid progress of the symptoms, and the external character of the affection, led me now, for the first time, to suspect the origin and nature of the mischief. Thinking that the pain might be lessened by a diminution of temperature, I arose, and, anxious to discover whether any vestige of injury appeared, I examined the part minutely. The surface appeared entire, except in the centre of the inflammation, where the skin was evidently rough, and discoloured. Around this spot, which was somewhat elevated, the integuments were of a dusky-red. My fingers were much swoln, as were the wrist and inferior part of the fore-arm; and the superficial absorbents could be traced by their tenderness from the affected part to the axilla. At this time, which was not twelve hours after the first appearance of the symptoms, my tongue was quite white, furred, and dry, my pulse (which in health is only 57) was 98, full and firm; I felt cold and chilly although my skin was hot, and I was very thirsty; I also had a dull pain of the head. Being now satisfied that the affection was not of the trivial nature I at first imagined, I immediately took some purgative medicine, abstained from every

thing which could keep up or increase excitement, and, in short, adopted, in all points, the antiphlogistic regimen.

"The precise manner in which the injury was received, I cannot positively determine; but, as I am convinced, from the appearance it exhibited, that it was neither from the needle nor the knife, it must, probably, have been inflicted by the extremity of a rib. Although I considered the inflammation of the affected part rather phlegmonoid*, and thus different from the character of that in which you recommend treatment by incisions, yet, from my own experience of the efficacy of such surgery in cases of phlegmonoid erysipelas, and from a conviction of the advantage which must result from rapidly emptying the inflamed vessels, removing the tension of the part, and preventing the formation of pus among the subjacent tendons, I resolved upon trying incision in my case. My friend, Dr. Tweedie concurred with me in approving the plan, and a free incision was made through the most inflamed part, down to the fascia. The scalpel divided a small vesicle which had formed in the situation of the injury. Two or three small arteries bled

* Dr. Tweedie considered the affection to be decidedly erysipelatous. In addition to the vesicle at the seat of the injury, and the immediately surrounding deep red and firm swelling, there was a lighter redness of the whole back of the hand, with great tumefaction.—W. L.

freely, and the hemorrhage was encouraged by immersing the part in warm water, and subsequently covering it with a warm poultice. I soon experienced great relief. The swelling, redness, and heat were considerably lessened, and the limb was much less painful.

" Perhaps it is a circumstance worth mentioning, that during my illness (which lasted a fortnight) and for some time after, my bowels were in a most torpid state, requiring treble doses of the most operative medicines to stimulate them to moderate action. In consequence of this intestinal apathy, I was obliged to repeat the medicine twice which I had taken in the morning, before any effect was produced; and, although my bowels had been previously quite regular, and my dejections natural, the motions which were now procured betrayed every symptom of deranged secretion. In the evening ten leeches were applied around the incision, and bled copiously; five grains of calomel, with ten grains of jalap and ten grains of Dover's powder, were taken at bed-time. Some sleep was enjoyed during the night, and the next morning was ushered in with a decided improvement in all my symptoms. From this time the inflammatory action gradually subsided, and with it disappeared the constitutional disturbance.

" At this stage of the case you became witness of the symptoms, and, in accordance with your ad-

vice, the poultice was continued and the antiphlogistic treatment persevered in. The wound suppurated freely, and was soon healed. Some time however elapsed before the glands in the axilla lost their tenderness; but, at present, nothing, save the scar occasioned by the scalpel, remains to evidence my former illness.

"I am not aware that your plan of treating erysipelas has before met with such an application, but I am convinced, as well from the marked success of my own case, as from the rationale of the remedy, that it may be used both with safety and effect in a class of accidents, whose fatal character has hitherto ranked them in the list of our most frightful diseases.

"I now embrace this public opportunity of returning you, my dear Sir, my warmest acknowledgments for your kind attention; believing that I owe my present health and probably my life, to the application of a plan of treatment which you have had the honour to propose, and the ability to defend.

"I remain,
"With much respect and gratitude,
"Very faithfully yours,
"J. DILL."

"London Fever Hospital,
"February 18th, 1828."

CASE XXXI.

Erysipelas of the Hand and Fore-arm, treated by incision.

Mr. C., a general practitioner residing in my neighbourhood, consulted me for a severe inflammation of erysipelatous character affecting the hand and fore-arm. In a statement of his case, with which he has favoured me, he says that he "first noticed a slight irritation over the metacarpal bone of the right ring finger on the 3d of October. The next day a small elevation of the skin, like that of urticaria or a gnat-bite, was observable on the same spot. This, however, scarcely excited my attention; but, having caught a severe cold from getting wet on the outside of a stage-coach, I found the inflammation extend rapidly from this point. At night I applied twelve leeches, which materially reduced the swelling; and afterwards used fomentations and poultices. I was called up, however, at two o'clock in the morning of the 5th, and having been obliged to use my hand freely at subsequent times during that day, I found all the benefit derived from the above remedies to be counteracted. During the 6th and 7th the pain was excessive, while the swelling of the cellular membrane had extended nearly as high as the elbow joint. On the 8th, all these symptoms were aggravated, and finding the

pain extended to the axilla, I applied to Mr. Lawrence."

When I saw this gentleman on the evening of Oct. 8th, the situation of the original affection, which he then supposed to have been a gnat-bite, was occupied by a small livid spot covered by a white and sodden cuticle. It seemed to have been a vesicle, which he had punctured with a lancet, but without producing any discharge or relief. The whole back of the hand formed a very considerable, tense, and firm red swelling. The wrist and neighbouring part of the fore-arm were swoln and red, the same state extending partially to the elbow. The hand was extremely painful, with an intolerable sensation of heat and tension; severe pain extended along the limb to the axilla. I made an incision through the swelling at the back of the hand, from the wrist to the fingers, and another joining this at right angles: the relief was complete and almost instantaneous. The hand was immersed in a basin of warm water to encourage the bleeding, when Mr. C. said that the pain and tightness were gone, and that he was perfectly at ease. The cellular texture had a red appearance, and was firm, so that the incisions did not gape. A few ounces of blood flowed from the divided vessels. I recommended him to apply eighteen leeches to the hand and fore-arm; to foment and poultice the part; to take saline

aperients; observe an antiphlogistic regimen; and to remain quiet at home for two or three days.

"The result", he says, "was, that on Wednesday, Oct. 10th, I was enabled to extract a molar tooth for a patient, which required considerable force; since which time I have used my hand without experiencing the least inconvenience; nor has there been the slightest sign of inflammation since, although I have had occasion to use considerable exertion."

*CASE XXXII.**

Phlegmonous Erysipelas of the Fore-arm, treated by incisions, followed by syncope and death.

"Charles Neale, a knife-grinder, æt. 47, had been observed for two or three weeks to be altered and strange in his manner, when he suddenly attempted to destroy himself on the 12th of July: he first made a cut in his fore-arm, and then a large deep wound, from side to side, in the upper part of the neck. He was brought to the hospital, and immediately seen by Mr. Lawrence. The wound, which was somewhat haggled, had

* The particulars of this case were not inserted in my case-book at the hospital: I therefore transcribe the report given in the Lancet, which is correct in all essential points.

passed between the thyroid cartilage and the os hyoides, detaching the former almost completely from the latter, and making an aperture into the larynx half an inch wide. The carotid artery was laid bare, and seen beating in the right extremity of the cut, which had passed above the superior thyroid artery, and had not divided any considerable vessel; one small artery was secured. When the patient was placed in bed, with the head brought forwards by pillows, the great gash in the throat was closed, so as to present the appearance of a mere skin wound. Three sutures were employed to retain the edges of the wound in opposition, and it was covered with a damp rag. The patient could now speak and swallow perfectly; nothing escaped. Opening medicine was administered, and the patient remained quietly in the above-mentioned position. The cut in the forearm, which had penetrated the fascia, was dressed with sticking plaster.

"18th. Venesection to the amount of ℥xvj, on account of pain in the head, and feverishness. Saline mixture.

"15th. Four grains of calomel, with twelve of jalap. Saline medicine continued, with Epsom salts.

"18th. The wound in the throat has united by adhesion, excepting the mere division of the skin,

which furnishes a little moisture. Articulation and swallowing are performed as well as ever.

" 19th. He became again disturbed in the head, restless, and violent, so that it was necessary to confine him, and to bleed him twice in the course of the day, twelve ounces being taken in the morning, and sixteen in the evening. A saline draught every six hours, with forty drops of liq. antim. tart.

" 20th. The fore-arm, which had been poulticed for three or four days, began to look red, and to be painful; twenty-four leeches.

" 21st. Pain in the head with nausea, and very foul tongue. Pulv. ipecac. ℈j cum ant. tart. gr. j. immediately; after its operation, two grains of calomel every six hours. The complete adhesion of the wound was shown in the operation of the emetic, which acted powerfully, without the least pain or inconvenience in the wound, and gave considerable relief.

" 23rd. Extension of inflammation in the fore-arm, with fever. Great uneasiness of mind. He expresses a wish to die, and a persuasion that he shall not recover. Twenty-four leeches to the fore-arm.

" In three or four days the local mischief had

increased, and assumed the form of phlegmonous erysipelas, affecting the whole fore-arm, and ascending the arm; thirst, restlessness, great uneasiness of mind, and apprehension added to the patient's sufferings. The recent adhesion of the wound gave way, and it gaped open as widely as at first, with a large aperture into the larynx. Fluids now escaped from it in swallowing. Considering that the case must terminate fatally, from the unfortunate combination of so severe an inflammation with a serious wound, unless the former could be stopped, Mr. Lawrence made two incisions through the skin and cellular membrane of the fore-arm, extending nearly the length of the limb. Blood flowed from these at first rather freely, but not more so than is desirable for procuring relief to the inflamed and distended parts; the bleeding gradually stopped, and had ceased in about three quarters of an hour, when the patient fainted: before any means could be adopted for his restoration, the state of syncope had terminated in death. As the arm had been laid in a broad wooden platter, the blood was collected, and afterwards measured; it amounted to a little more than twenty ounces.

"The body, examined the next day by Mr. Lawrence, in the size, redness, and firmness of its muscles, and the proportion of fat, might be called stout and robust. The incisions in the fore-arm had not penetrated the fascia. A large

transverse opening was found in the larynx between the epiglottis and glottis, neither of these being injured. Considerable serous infiltration was found under the arachnoid membrane, and a somewhat increased quantity of fluid in the ventricles. The serous membrane of each lung had become extensively converted into cartilage; there were thin plates as broad as the finger, and innumerable small flat portions, from the size of a pin's head to that of a split pea. Immediately under these was a stratum of thin compact substance, as black as soot. The black spots throughout the substance of the lungs were very dark coloured and numerous, and the bronchial glands peculiarly deep black. Inky fluid could be squeezed out of the latter in abundance, and in small quantity, by hard pressure, out of the compact substance under the cartilage.

"Mr. Lawrence observed to the pupils, that the fatal event of this case was one of those unusual occurrences, which neither the circumstances of the patient before, nor the examination after death could elucidate. It might be compared to death from syncope in venesection, which had occasionally happened. He mentioned instances of feebler and more reduced patients, in whom the loss of blood had been much more considerable, and followed by the most favourable changes in the part, and in the system. A robust muscular man, like this patient, could not be endangered under ordi-

nary circumstances, from the gradual loss of twenty ounces of blood; and Mr. Stanley, who went into the ward accidentally some time after the incisions were made, and looked at the patient, had no idea of danger. Mr. Lawrence stated that he should therefore adopt exactly the same practice in another similar case: but he conceived that the present instance would suggest the salutary caution of attending closely to the state of the circulation on these occasions. He mentioned, that he had lately made one incision along the forearm, in a very advanced stage of phlegmonous erysipelas, where the patient, originally very weak, had been much enfeebled by the disease; the blood gushed out rapidly in an immense stream, which was, however, immediately checked by elevating the limb perpendicularly, and retaining it for some time in that position.

CASE XXXIII.

Œdematous Erysipelas of the Leg and Foot from an injury: copious bleeding from an incision on the foot.

John Cogin, a very tall man of unhealthy appearance, received a severe blow on the ankle, to which he paid no attention until the foot and leg inflamed and became so painful that he was obliged to discontinue his ordinary labour. He was received into St. Bartholomew's on the 11th of Ja-

nuary, 1828, about a week after the accident. The foot and inside of the leg in its lower half were considerably swoln, dark red, acutely painful, and pitted on pressure. He was thirsty; he had a frequent pulse, hot skin, tongue white and coated. (Thirty leeches; fomentation and bread poultice; opening medicine, and afterwards saline mixture with antimony.)

Jan. 13th. The leeches were repeated, and the local inflammation was much lessened; but the tongue remained foul, and the alvine discharges very unhealthy.

14th. The inflammation had again increased, and extended higher; the pulse was stronger. (He was bled to fourteen ounces by the house-surgeon with temporary relief.)

15th. The erysipelas had nearly reached the knee; tongue thickly coated, countenance sallow, pulse feeble. (I ordered ten grains of the subcarbonate of ammonia every six hours: the fomentation and poultice were continued.)

He improved under this treatment, the redness and swelling being considerably diminished. The tongue however did not become clean, and an inactivity and even drowsiness, which had been observable from the time of admission, were not lessened. On the 19th there was considerable inflam-

mation on the outside of the foot, which was much swoln, tense, and acutely painful. The tongue began to show a slight brown tint, and was rather dry; he was thirsty, and inclined to doze. Mr. Lloyd and other gentlemen recommended a free incision under the supposition that matter had formed; and, as I considered the measure advisable, although I could not distinguish fluctuation, I made a cut about two inches long through the skin and cellular texture, which was loaded with serous effusion. The wound bled so little at the moment that sponging with tepid water was directed to encourage the bleeding, which soon became more free. The nurse, to whom this duty was entrusted in consequence of the sister of the ward being ill in bed, allowed the blood to flow for nearly two hours, before she apprised the house-surgeon, who found the patient with a very feeble pulse and cold extremities. By raising the limb, and placing a bit of lint between the edges of the wound, the hæmorrhage was immediately stopped. The pulse rose, and the heat of the body was restored by the administration of wine, brandy, and ammonia. The local inflammation was completely relieved, and the erysipelas disappeared entirely from the leg. Wine and stimulants were continued, and the pulse regained its strength. The tongue however was rather dry, and covered with a yellow crust in the middle, the discharges from the bowels were unhealthy, and the listlessness with disposition to sleep remained the same. This kind of sensorial

oppression increased, the tongue became brown and quite dry, and he died on the 28th. The body was immediately removed from the Hospital by his friends.

CASE XXXIV.

Phlegmonous Erysipelas of the Arm, from a puncture in dissection; incisions employed at an advanced period of the affection; fatal termination. Communicated by Mr. F. Bullin.

" Mr. James B———, æt. 36, of bilious habit, had been in very good health latterly, though subject to occasional inflammatory swelling of the glands near the internal condyle of the right os brachii. On the 22d of February 1827, he examined, at eight o'clock in the morning, the body of a patient who had died of phthisis pulmonalis. In the evening he felt unwell, and retired to rest earlier than usual. He slept well; but, when he awoke in the morning of the 23d, he discovered that the glands above the inner condyle of the right arm were inflamed, swoln, and rather painful. He left his bed in order to dress himself, but he was almost immediately seized with a severe rigor, which lasted full half an hour: he returned into bed immediately, and sent for me. When I saw him at half past ten a.m. he complained of excessive pain in the head, accompanied with a sense of oppression and great heat. The pulse was 90, soft, and in no respect unpleasant. Skin very hot;

breathing heavy, with a sensation of oppression at the præcordia, the breath expired from the lungs being very hot, and as though boiling. Tongue moist, slightly furred, and yellow. Countenance flushed; pupils rather dilated; bowels regular the preceding day. Previous to my arrival he had taken an emetic, the effect of which on the stomach had not ceased. I ordered six grains of calomel immediately and a purging draught afterwards; saline mixture. Twelve ounces of blood to be abstracted from the neck by cupping; twelve leeches to the arm. Three p. m. Relieved by the bleeding and medicine, it having acted freely. Pulse 100; other symptoms as before. Eleven p. m. Pain in the head returned, at which time the hair was removed. Pulse still soft and 110; the other symptoms are the same as before. (Twenty-four leeches to the temples. Three grains of the extract of hyoscyamus at bed-time; cold wash to the head.)

"24th. He had dozed a little during the night, but had no refreshing sleep. Pain in the head less; breath not so hot; skin cooler, and tongue improved. Pulse soft and 120. The arm is more swoln and painful. (Six leeches to the arm. Continue the medicine.) At eleven p. m. the arm was very painful, and the head-ach increased. Pulse 120. (Bleeding to ten ounces; poultices applied to the arm, and ice to the head. Saline medicine continued with the hyoscyamus at night.)

" I now felt uneasy about the case, and wished to consult Mr. Lawrence, but Mr. B———, whose intellect was collected throughout, was confident in the mode of treatment adopted, and objected.

" In the morning of the 25th he felt better in all respects, having had a little rest. There was still considerable heat and pain about the head. The arm not worse; pulse 120 and soft. (Twenty leeches to the temples. Three grains of calomel immediately; a purging draught; the former medicines continued.) Eleven p. m. Increased heat and pain of the head; the arm is no worse; the pulse and general symptoms continue as before; the bowels are freely open. (Venesection to twenty ounces, which produced faintness.)

" 26th. He looks and feels better in all respects, talks jocosely, and expresses confidence in his own management. The arm is much the same; pulse 120 and soft; the head cooler. He supposed the unpleasant affection about his head arose from the irritation of the arm. (An aperient draught; saline medicine continued.) Eleven p. m. A dozen leeches had been applied to the arm by his own request. Its size is much increased, and the inflammation wears more of the erysipelatous character, and is extended in every direction; it is as high as the shoulder. This very rapid change made me uneasy, and I blamed the application of the leeches as inducing the erysipelas. In other

respects, as well as in the morning; pulse soft and 120; bowels open.

"27th. He is better, and feels satisfied that he shall recover. The pulse and state of the arm are much the same as yesterday. At eleven p. m. the general appearance and symptoms were not altered, but the pain in the head was increased. At his request I took blood from the back of the neck, and applied twelve leeches to the temples.

"28th. I found him sitting up on my arrival; he declared himself altogether better, though the arm remained the same. He was still confident. I observed that the inflammation had extended to the body, and that, if not worse, certainly there was no improvement. I felt easy about the head, but anxious respecting the arm; and, at my pressing request, he consented to see Mr. Lawrence, who came at three p. m. and considered it necessary to make incisions in the inflamed parts. He made two cuts through the skin and cellular substance, one in the arm, the other in the fore-arm, from which from two to three pounds of blood were lost, when partial syncope came on, during which several stools were passed. He complained of loss of sight, together with an indescribable sensation of alarm, as he expressed it, in the whole line of the spinal cord; but he repeatedly stated that he could not express his feelings. His head, which had hitherto remained hot, now became too

cold; but his extremities were comfortably warm. The arm was placed directly after the operation in a poultice, and some mutton broth administered. His pulse had sunk in strength, and quickened; at the expiration of two hours and a half I left him. Ten p. m. He still complains of loss of sight, and can scarcely discern my watch. He likewise complains of the same sensations all over the body. Some brandy and water was given him, which he said produced so much bile on the stomach that he would take no more. Pulse 96 and free; skin comfortable; tongue moist and clean. The head still rather cold, but free from pain. The arm was less red and swoln, and looked altogether better. Both the local and the general symptoms led me now to think favourably of the result; and having administered some mutton broth, I gave him two grains of opium in the hope of quieting the state of nervous alarm, and left him for the night.

"March 1st. Eight a. m. The mind had wandered, and he had not rested. Respiration deep and heavy, attended with some hiccough. When spoken to he was perfectly collected, and requested to know my opinion. The pulse and other symptoms exactly the same as last night. The arm was much smaller and less red, and in every respect better; he wished to see it, but complained that on looking towards it he had not sufficient power of vision. Wine and ammonia had been

given, but he said they made him bilious. Feeling considerable alarm at the accession of the hiccough and stertor in breathing, I called again on Mr. Lawrence, and afterwards administered two grains of opium. He wandered when left to himself, but his faculties were still alive when he was roused. Three p. m. Pulse about 96, and moderate. Dr. Back saw him, and expressed a favourable opinion of him: he advised more opium, and declared his belief that he had not lost a drop too much blood, and that his present symptoms did not arise from loss of blood. He did not recognize the doctor at first, though well acquainted with him; and when he was gone, blamed me for introducing him up-stairs unannounced, as he said the sudden surprise shook him. Eleven p. m. He groans much, and is troubled with hiccough; face covered with large drops of perspiration. When asked if he felt pain anywhere, he answered 'yes, inexpressible in the stomach.' Some warm cordials were administered with volatile alkali. Pulse 96 and good. Half-past twelve p. m. Groans and hiccough increased. Pains unrelieved. Being thrown entirely on my own resources, I determined on administering an enema of opium, with assafœtida, from which he appeared for about an hour to be much relieved.

"March 2nd. About two o'clock a. m. every unpleasant symptom returned; but the pulse still keeping the same and good, I yet hoped a favour-

able result. After some reflection I retired to prepare another and stronger enema, and whilst doing so was called up to him. He had drawn his arms from beneath the clothes, and lifting them drew a very heavy groan, and exclaiming 'there is an end to James B——,' died instantly. Unfortunately the body was not examined."

The preceding narrative was obligingly communicated to me by Mr. Bullin, the friend and partner of the patient, on whom he attended during his fatal illness with the kindest and most unremitting solicitude. I first saw the patient on the 28th of February, when the whole upper extremity to the shoulder was red and swoln with phlegmonous erysipelas. The countenance was flushed and anxious, the features sharp, and the case wore a very serious aspect. The local and general means, although active and followed up without delay, had altogether failed to arrest the inflammation; and the treatment by incisions offered, in my judgement, the only chance of saving the patient. The adipous and cellular texture was found highly inflamed, loaded with serous effusion, and assuming here and there the yellowish appearance which precedes sloughing. There was no suppuration. It is clear from the narrative of Mr. Bullin, that the progress of the local mischief was arrested by the incisions, and that they produced, what all the previous measures had failed to effect, a very marked diminution of

the inflammation. Whether the fatal event happened in consequence or in spite of them, is a question on which opinions will differ, and light would probably have been thrown by examination of the body.

It does not appear to me that Mr. B. died from loss of blood. It has been suggested that he perished from the shock of the operation. If we understand by that phrase a violent impression on the nervous system, ending fatally within a short time, the explanation is hardly admissible in this instance. I remained in the room, after making the incisions, about ten minutes, during which nothing occurred to attract particular attention. At the end of twenty-four hours, when I again saw Mr. B. he was sleeping tranquilly, with a steady and quiet pulse, by no means deficient in strength; and the state of the arm was greatly improved. He died thirty-six hours after the incisions had been made.

When we consider how often death has ensued from wounds received in dissection under various plans of treatment, we need not be surprised at a fresh instance of fatal termination. When we reflect further that both the local and general symptoms were severe in this case, and that, at the time of making the incisions, the inflammation not only occupied the whole upper extremity, but had even extended to the body, we may reasonably doubt

whether the event of the case was in any way owing to that treatment.

CASE XXXV.

Phlegmonous Erysipelas of the Lower Extremity consequent on puncturing an abscess of the toe, treated by incisions, and terminating fatally.— Communicated by Mr. F. Bullin.

" Miss R., 21 years of age, a healthy well-formed young woman, of very fair and delicate complexion, had been affected for some months with swelling and inflammation over the first joint of the great toe, which had once or twice suppurated. She walked very lamely into my house on the evening of July 30th, and my attention was directed to a swelling in the situation mentioned above, livid in appearance and much larger than those usual on these joints; it was accompanied with much inflammation and thickening. She complained of lancinating pains in the leg, and after close examination, I was induced to suspect the existence of matter external to the joint. I consequently made an opening into it, inserting the lancet obliquely to avoid injuring the joint; about a tea-spoonful of pus mixed with blood was discharged, and it bled profusely. She experienced immediate relief, and having received directions to poultice the part and keep it quiet,

walked home. She had been unable for some days to attend her usual employment in Burlington Arcade, and had frequently been obliged to ride; but, on the morning after the puncture, she walked the whole distance without uneasiness.

"About four p. m. I was sent for to see her, and found her in bed complaining of pain in the head, with anxious and pale countenance, very quiet but soft pulse. Her parents informed me that during the morning she had frequently expressed her satisfaction at the relief given her by the operation, but that about two o'clock she had been seized with rigor, and complained of severe lancinating pains passing from the joint affected to the foot, calf of the leg, groin, and even into the axilla. The rigor subsided into a state of syncope, after which she had been put into a hackney-coach, and taken home. The poultice had been discontinued to enable her to walk, contrary to my directions. Previous to my arrival the mother had given her some brandy and water, and at the time I saw her she was rallying. The toe was much less inflamed than on the night previous; it was very tender. The calf of the leg and the thigh were also tender, but presented no visible signs of inflammation. The absorbent glands were not affected. I ordered fomentation, poultice, a brisk cathartic, with calomel and opium at night.

"August 1st. Pain in the head increased. Coun-

tenance anxious. Skin hot and dry, great thirst, furred tongue, pulse 100, and very soft. The foot nearly as before, with the exception of a spot of inflammation on the plantar aspect, about half an inch from the injured joint. The groin and axilla still painful. The bowels had acted, but not satisfactorily. (A colocynth and calomel pill immediately. Saline medicine. Eight leeches to the temples. Six leeches to the foot. Poultice and fomentation.)

"2d. The head is slightly relieved, and the inflammation of the foot gone. The joint of the toe is perfectly white, and scarcely exhibiting the wound. The bowels are open. (Twelve more leeches to the temples. The medicine continued with ten grains of Dover's powder at night.)

"3d. She rested well, and is nearly the same today. The bowels are confined. (Opening medicine. Saline mixture with camphor. Calomel and opium, a grain of each, every eight hours.)

"4th. The fever is rather less, though she still complains of much thirst. The axilla and groin are not free from pain. Another spot of inflammation on the plantar region, and one also on the dorsum of the foot. (Ten leeches to the foot. Continue the medicine with two of the calomel and opium pills at night. Soda draughts. Poultice continued.)

"Feeling anxious for this patient, and five days having elapsed without much improvement, I mentioned to the parents my intention, that if she were not better in a day or two, I should request a visit from you. They felt alarmed by what I stated, and in consequence, the medical attendant of her master was requested to see her. He came after I had left, and, not knowing that opium had been administered, ordered 40 minims of laudanum, which she took. She had been delirious during the night, and all the symptoms were much worse on the following morning. There was severe headach, great thirst, fever, anxiety, with flushed countenance, and quick pulse, ranging from 120 to 130, together with oppression about the præcordia. (Twelve leeches to the temples. A blister to the sternum. Aperients with saline effervescing draughts.)

"I did not see her that evening; and the mother, finding her restless, gave her two more of the pills, which she knew contained opium. At night the same gentleman visited her again, and ordered 40 minims of laudanum, with a saline mixture containing half a drachm of the same opiate.

"5th. The inflammation of the foot was lessened, but the constitutional disturbance had become much worse from this kind of medical cross-firing. I consequently declined attending any more, and took my departure. At this period there was no

inflammation in the foot or leg. They bore the same appearance as on the day after I had opened the abscess. I did not see the patient again until the 9th, when you were kind enough to visit her with me. The inflammation which you then saw had taken place within the preceding twelve hours."

I found this young woman labouring under phlegmonous erysipelas of the foot and leg; the former was swoln, and bright red, and the latter was in the same state, nearly up to the knee. She was also suffering from fever, the symptoms of which were not severe: it must, however, be observed, that there was a sharp state of features, with a rather wild look, and a sharp jerking pulse, of which the strong vibration was felt in both arteries of the fore-arm, when the fleshy part of the limb was grasped with the hand. Two incisions, of three or four inches each, were made, one in the foot, the other in the lower part of the leg, and a small quantity of blood flowed from them. She rested rather better, and was a little improved the next day both locally and generally; but this improvement was not permanent, the febrile symptoms recurred, and the pulse retained its peculiar character, which I have always found a circumstance of very bad omen. During the fortnight that elapsed from my first visit until her death (on the 23d), every variety of local and general treatment was employed. Blood was taken from

the affected limb by leeches and cupping, with obvious relief; fomentations, poultices, and cold washes were employed. The inflammation never passed the knee; after remaining nearly stationary for some time, it gradually declined, and the redness and swelling had quite gone for three or four days before death. The latter event was caused by a continuance of the feverish disturbance, which was attended throughout by the vibratory pulse already described. Venesection was twice practised in small quantity, with partial relief; the blood being strongly buffed and cupped. The pulse ranged from 120 to 130—it was occasionally higher and lower; once or twice it was so low as 108, but never less. The head was shaved, and covered with cold wash; it was not affected in the earlier period of the complaint; but delirium came on, first at night, and afterwards through the day also. Salines with antimony, purgatives, calomel and digitalis, were all fully tried, with only temporary benefit. That nothing might be omitted, we employed hyoscyamus and opium in the latter stage, and gave a trial to tonics and cordials, sulphate of quinine and porter being the articles selected for this purpose. They were used most cautiously, but were decidedly injurious. In this case neither the erysipelas nor the incisions were the cause of death, which must be ascribed to the fever, originally excited by local irritation, kept up and aggravated by the free use of opium, in the beginning of the affection.

CASE XXXVI.

Œdematous Erysipelas of the Arm, consequent on venesection, treated by compression, and terminating fatally.

Mr. M. between 50 and 60 years of age, a person of spare habit, sallow and unhealthy countenance, who had suffered much from various attacks of illness, and had been previously much harassed in mind by his affairs, was bled in the arm for a pain in the side, with relief, on the 13th of June, 1827.

On the 15th he found the arm uneasy, and rather inflamed; the inflammation had become so considerable on the 16th, that he remained in bed, took opening medicine, and applied a cold wash to the limb.

I saw him on the 21st, at the request of Dr. Tweedie, who had visited him one or two days previously. At this time the entire limb was uniformly swoln from the hand to the shoulder; the inflammation had not reached the latter until the morning of this day: the swelling was soft, and pitted on pressure. The entire skin was of a dusky red, the redness disappearing completely on pressure, and quickly returning. There was no vesication. He had taken twenty grains of

jalap, with eight grains of calomel before Dr. Tweedie saw him; this had purged him violently, and the bowels were still disordered. The tongue was unnaturally clean. The pulse was frequent and easily compressed. He had suffered little or no pain, and only slight feverishness: his nights had been tolerably good; he had, however, rambled a little last night, perhaps, in consequence of a small dose of camphor with extract of hyoscyamus (three grains of the former, with two of the latter). The pulse was frequent and compressible; the features sharp, and the countenance anxious.

The extent of local mischief and its progress towards the trunk, the bad constitution of the patient, and the exhaustion and feebleness caused by the existing attack, together with the unfavourable expression of countenance, made us augur very badly of the case. We considered strong measures, particularly incisions into the inflamed parts, inadmissible, apprehending that the patient might sink under the loss of blood. It appeared to be a fair case for trying the plan of compression recommended by Velpeau. Accordingly, no medicine was ordered, and a bandage was applied in the evening, with moderate firmness, from the hand to the shoulder. In doing this, it was necessary to raise him in bed, when it was found that the redness and swelling, which had been supposed to terminate at the shoulder,

extended over the scapula, and along the lateral and posterior part of the trunk. As I was not acquainted practically with the effects of compression in such cases, I directed that, if it should cause pain, and the pain should increase, the bandage should be removed; but that it should be left on, if it merely produced temporary uneasiness, followed by relief. These directions were either misunderstood or neglected. The bandage, which had been applied in the evening, was left on till seven in the morning, a period of about twelve hours, although severe pain had come on, within two hours from its application, gradually increasing in intensity, with burning heat of the part, and the greatest restlessness, so that the patient endured greater agony than he had ever experienced, and passed a most dreadful night. We found the limb in a condition of universal vesication from the fingers to the shoulder joint, as if its whole surface had been covered with a blistering plaster, which had acted with the greatest effect. One large bladder covered the back of the hand; there were other similar ones on the fore-arm and arm, and all the intervening cuticle was separated from the skin by a thick yellow jelly. A large bladder in the middle of the fore-arm contained bloody serum, and the subjacent cutis was livid. Over the entire surface of the arm, fore-arm, back of the hand and fingers, not a particle of sound adherent cuticle was to be seen. In short, the bandage had acted

as the most violent local irritant, and had decided the chances already much against the patient. Not to abandon the case without an effort, an incision was made through the skin and adipous substance, for nearly the length of the fore-arm. Blood flowed from the cut in a large stream with great rapidity, issuing partly from small arteries, partly from veins. About twenty ounces were lost very quickly, with great relief to the patient's feelings. Syncope was not produced, but we deemed it advisable to stop the bleeding, which was easily accomplished by elevating the limb, and keeping it in the vertical position. The patient sunk, and expired in the evening.

Examination thirty hours after death.

The whole stratum of subcutaneous adipous and cellular structure was filled throughout with a thin yellow purulent fluid, in some parts whey-like, in others thicker. There was no collection of matter at any point, and no sloughing. Fulness of vessels and serous infiltration were observed in the cellular membrane along the side and back of the trunk, and the cuticle had already separated in this situation. The arachnoid membrane was thickened and opake, and elevated by copious serous effusion into the cellular texture of the pia mater. Vessels of the brain turgid. Slight red stains, just perceptible, in the medullary sub-

stance of the hemisphere. Water in the ventricles. (There had been no affection of the head, excepting the very slight degree of confusion on the night when the camphor and hyoscyamus were taken. The intellect was perfectly clear to the very moment of death.) Both lungs were universally and strongly adherent to the chest. The abdominal viscera were healthy. The vein, which had been punctured in venesection, and the neighbouring veins at the bend of the arm, were free from inflammation.

CASES OF INFLAMMATION OF THE CELLULAR STRUCTURE.

The two following cases of inflammation of the cellular structure are related to shew the difference between that affection and phlegmonous erysipelas, in which the skin and cellular structure suffer together.

CASE XXXVII.

Acute and rapidly fatal Inflammation of the cellular substance of the neck and chest, not attended with affection of the skin.

Mr. D., a gentleman about 64 years of age, tall and rather corpulent, with a somewhat pallid and pasty appearance rather than that of strong health, who had been a free liver, and suffered much from

gout, for which he had taken various quack medicines, and had also been considerably annoyed by stricture of the urethra, came to London in the spring of the present year, and placed himself under my care for the latter complaint. I gave him mild alteratives and aperients with colchicum, and particularly laid down a plan of living for him, in which he was restricted to a very small quantity of wine, and altogether to a light moderate diet. He was bled from the perineum by cupping and leeches, and used warm bathing. Under this course he was proceeding favourably; his appetite was good, bowels regular, and the tongue, which had been whitish and flabby, improved considerably. On Monday, April 30th, 1827, a friend dined with him, when he ate very heartily, and drank freely. On Tuesday, May 1st, friends from the country dined with him again. He had an excellent appetite, took a very plentiful dinner, ate cheese and drank freely of porter, and then drank a large quantity of wine, which produced intoxication and sickness. He passed a very restless night, and felt ill the next day (Wednesday), when he was sick again. He went out on Wednesday, being a cold day, with east wind, and returned feeling very uncomfortable; with pain about the throat, running from the mouth, loss of appetite, and thirst. Soon after, shiverings came on, for which he first took powdered ginger, and afterwards brandy and water. After a very bad night, he was still worse on the next day (Thursday), and sent for me. He

was up. There was an œdematous swelling at the right side of the neck, under the lower jaw, and extending downwards; it formed a large and rather loose fold of an œdematous feel: there was some pain on pressure. He felt very ill. The pulse was accelerated and full; the tongue foul and rather disposed to dryness; thirst; no appetite; a confused state of head. (Calomel and jalap followed by a purging draught; twenty ounces of blood by cupping from the back: diluting drinks.) The head was relieved, but the swelling about the neck and jaw increased, with difficulty of breathing; and the latter symptom became so much worse in the night, that he got out of bed, not being able to breathe in the horizontal posture, and sent an urgent message to me early in the morning, representing himself in great danger. At eight in the morning of Thursday I found him sitting on a sofa, propped up with pillows, and with most hurried and difficult respiration. The distress of breathing had been great and increasing during the night, attended with corresponding disturbance of the circulation. The heart had been beating most violently. He had not only felt but heard its violent palpitation. The pulse was about 144, and still rather full and strong: tongue dry and mouth parched. The swelling now occupied both sides, forming a large dewlap under the jaw; it extended down the neck, and continued on the right side over the chest; it was tender when touched. No difficulty of degluti-

tion; no cough; no expectoration: I took eighteen ounces of blood from the arm; it flowed rapidly and in a full stream. (The landlady of the lodging-house had already applied leeches to the chest.) The pulse sunk considerably, but the breathing, although easier, was not essentially relieved. The countenance was pale and anxious, and would alone have indicated great danger. After the venesection, he was prevailed on with difficulty to go to bed; the countenance expressing great anxiety, the extremities beginning to feel cold, and the most unfavourable prognosis being given by myself and Dr. Tweedie, whom I had sent for. We left him at nine, and he expired before two.

Examination.

Inflammation of the cellular membrane. The cellular texture of the swoln parts was partly red, and loaded with serum, partly yellowish, and containing a thin semi-purulent fluid, partly of a deeper and dirty whitish-yellow tint, and containing more completely formed pus. These fluids were disseminated in the cells; not collected. However, about the right sub-maxillary gland, the first seat of disease, there were two or three small depositions of well formed pus. Such was the state of the cellular membrane under the skin of the neck, on the anterior and lateral parts generally; and it was yellowish and loaded with pus under and among all the muscles of the front

of the neck; a similar state under the skin on the right side of the chest. But the most important point was a continuation of the affection behind the sternum into the chest, where it occupied the whole mediastinum, and the entire adipous and cellular membrane about the pericardium, causing considerable swelling of those parts. The pericardium was not thickened nor otherwise altered, but its internal surface was more vascular than is natural. The mucous membrane of the trachea and bronchia, &c. was red, but not covered with increased secretion. Liver diseased throughout, pale with irregular surface, inequalities not larger than peas, but universal; a kind of lobulated structure internally.

CASE XXXVIII.

Chronic Inflammation of the subcutaneous cellular structure of the lower extremities.

Mr. T. W. æt. 27, of slender make and spare habit, and accustomed to live regularly, consulted me in the early part of the present year for a swelling of the right lower limb, which had existed already between two and three months, and had not been benefited by the treatment hitherto pursued.

The swelling, which had begun without any ap-

parent cause, and increased gradually, now occupied, almost uniformly, the whole thigh, leg, and foot. In the former however the anterior and inner part was more swoln than the rest of the limb. Some degree of firmness to the feel, and of greater swelling was observed in the situation of the absorbent glands, of the great femoral vessels and the internal saphena vein. The integuments of the thigh were unaltered; the leg was equally swoln throughout, firm, and hardly pitting on considerable pressure; the integuments rather tense, and of a slight dusky red tint in the lower half; it felt warmer than the opposite limb. The swelling of the foot had more of the œdematous character. There was some sensation of heat and slight pain in the limb: these were hardly noticed while it was at rest: but the swelling increased, and the leg became redder, hot, and very uneasy, after exercise. It was at all times stiff, so as to cause considerable lameness. The means that were employed consisted of abstinence from fermented liquors and regulated diet; a course of Plummer's pill with aperients; elaterium in small doses combined with calomel and the compound extract of colocynth; squill and digitalis; leeches over the course of the femoral vessels; and bandage. Although none of these means produced any marked effect at the time, the swelling at last slowly diminished, and had entirely disappeared in about five months from the time of my first seeing the

case. Mr. W. then went into the country for a month, and returned in excellent general health, and with the free use of the limb.

He came to me again in about six weeks with a similar affection, and consequent lameness of the left thigh and leg. The state of the thigh was just the same as on the former occasion. The leg was uniformly and considerably swoln, with a slight general blush of redness, and obviously increased heat. The swelling was rather soft, and pitted on pressure. Neither in this, nor in the other limb was there any distension of the superficial veins. The inflammation had come on in this, and in the preceding instance, without any assignable cause. The appetite was good, the tongue clean, and the urinary secretion natural. Remembering the long continuance of the complaint on the other side, I determined to try a more active plan of treatment, for which the earlier period of the disease was favourable. I therefore confined him to bed, and enjoined abstinence from fermented liquors and solid animal food; took blood from the part largely by cupping; and administered active aperients in the first instance, following them with Plummer's pill and small doses of the sulphate of magnesia in infusion of roses. He remained in bed a fortnight, and was cupped, principally on the leg, five times, losing twenty ounces on two occasions, and sixteen on each of the other three. At the

end of this time the redness and unnatural heat of the limb were gone, and the swelling had nearly subsided. He could use the limb pretty freely. As he had been considerably reduced by the treatment and regimen, I recommended a visit to the sea-side, and have not seen him since.

ON

THE TREATMENT

OF

ERYSIPELAS

BY NUMEROUS PUNCTURES IN THE AFFECTED PART,

By R. DOBSON, M.D.,

PHYSICIAN TO THE ROYAL HOSPITAL AT GREENWICH,

IN A LETTER TO

W. LAWRENCE, Esq. F.R.S.

Read Feb. 12th, 1828.

" Royal Hospital, Greenwich, Feb. 11th, 1828.

" DEAR SIR,

" I HAVE been duly favoured with your letter containing various queries relative to my mode of abstracting blood in cases of erysipelas, to all which I shall endeavour to reply as distinctly and concisely as possible.

" With regard to the nature of erysipelas in which I use the punctures, I answer in all cases, whether simple, traumatic, or phlegmonous, the number of punctures I make at any one time varies according to the extent of the disease, but is rarely under ten, and seldom exceeding fifty; the depth and extent of each puncture vary also according to circumstances, being made deeper

when the parts are more tumid, but more superficial when the tumefaction is not so great; from two to four-tenths of an inch may however be considered the proper answer to that part of your inquiry. I repeat the punctures to the number and extent required, mostly twice a-day, and often in bad cases three or four times in the twenty-four hours, and in the whole course of this practice, which has been resorted to by me in several hundred cases, having adopted it more than a dozen years ago, I have never seen any bad consequence resulting from its employment. The quantity of fluid (for it is not blood alone, but blood and effused serum) which these punctures discharge, although sometimes considerable, need never create any alarm, for however freely it may flow at first, it gradually diminishes and soon spontaneously ceases. I use these punctures in every part of the scalp, or face, body, or extremities, and never more freely than about the eyelids, and I have often found a patient with both eyes closed, which by freely puncturing he has been able to open in a few minutes; and what will be found not less true, than it may appear surprising, these punctures mostly heal in a few hours, and never entail any material marks upon the patient!

"Where puncturing has been practised from the first appearance of the disease, suppuration rarely takes place, and I have observed that it always diminishes the extent of that result even in

those cases which have existed for some days before it has been resorted to: but when matter does at any time form under the skin, I let it out without delay wherever I feel it, but I think the integuments in those cases are more preserved by making several small openings, than by one large incision, and the matter is quite as well evacuated. And I am perfectly sure that before suppuration, puncturing, which can be repeated again and again as occasion may require, has every advantage over large openings, which, like punctures, cease to bleed before the disease is subdued, but which cannot like them be renewed, and are often followed by extensive ulceration.

" The adjuvants which I use with the punctures in this disease are in the first place a brisk cathartic of extract of colocynth, scammony, and calomel; I then prescribe the following mixture, which, while it keeps up the free evacuation of the bowels, acts rather cordially upon the stomach.

℞ Mistur. Camphor. f℥iij Liq. Ammon. Acet.
Tincturæ Rhœi āā f℥iss M.
Sumat cochlearia duo larga 3tiâ vel 4tâ quâque horâ.

I also employ a lotion composed as follows, viz.

℞ Liq. Ammon. Acet. Oss. Sp. Camphor. f℥j
Aquæ puræ f℥vij. M.

which, however unchemical it may seem from the camphor and spirit being divorced, experience has proved to be both a beneficial and a comfortable application, and may be always used with the punctures without any fear of revulsion or metastasis, which have sometimes resulted from the use of cold lotions without local abstraction; and it is no uncommon practice for me to prescribe wine or even gin for my patients in this disease at this establishment, at the very time I am puncturing them twice or thrice a day!

"I feel myself called upon to state the reasons which first led me to adopt the above mode of treatment. I had long ago observed that the generality of the profession, when called upon to treat a case of erysipelas, were mostly in the habit of ordering the application of leeches to the parts affected, thereby implying their conviction, in which I fully concurred, that local abstraction was essentially necessary to the cure; and having seen great inconvenience occur, and much valuable time lost, either from the difficulty of obtaining leeches, or when procured of making them attach themselves where most wanted, in the winter of 1813 and 1814 when I myself was attacked with erysipelatous inflammation of my right arm, consequent upon fever, to which leeches were directed to be applied; none being to be procured either in Rochester or Chatham (where I was then employed as surgeon in the Trusty hospital ship in

the Medway), I determined upon trying the effect of puncturing my arm in various places with a lancet, which I had often thought might be beneficially substituted for leeches, whose tardy triangular perforations it appeared to me could have no advantage over simple punctures promptly made in any situation and to any depth, extent, or number that might be required. And the relief they afforded me was far from disappointing my expectations, though I confess that I did not derive all the benefit from them which I might have done, had less time been lost before they were recurred to, or had they then been used with the same freedom which subsequent practice has proved to be so efficacious: suppuration however was happily prevented.

"The favourable result of puncturing in my own case encouraged me to try its effects in others. I did so with great caution at first, selecting only those cases in which the disease affected the extremities alone; but acquiring confidence in it by success, I soon began to use it more generally, and for several years past I have employed puncturing in the manner above detailed in every case of erysipelas which has occurred to me, in any part of the body; and in an extensive hospital practice my opportunities have been very numerous. But it is not to my hospital patients alone that this mode of treatment has been extended: I have employed it among women and child-

ren, and have prevented suppuration and sloughing of integuments in several, whose faces I have found perfectly hideous from the disease, and in whom I firmly believe that it would not have yielded to any other treatment. I am far from wishing to vaunt the success of my own practice, but I feel myself justified by it, in assuring the profession at large, that where erysipelas is confined to the extremities, or where it attacks the parts exterior to the cavities of the cranium, thorax, abdomen, or pelvis, the treatment above described has proved uniformly successful. And in the only two cases in which it has failed, out of several hundreds in which I have employed it, examination after death proved in both, that the meninges of the brain were affected by the disease, to which I had reason to suspect it had extended before I had an opportunity of adopting the punctures.

"Before I resorted to this practice I used to bleed freely in erysipelas; but experience has convinced me that general blood-letting is not so beneficial in this disease as, reasoning from its utility in other inflammatory affections, one would be apt to infer; and that puncturing, whether it be to discharge a fluid already effused, or to relieve gorged and distended vessels, has greatly the advantage over general bleeding, which by directly diminishing the natural stimulus of the heart, and probably by promoting absorption of morbid matter (which in the other mode is evacuated), tends

more to debilitate the patient and to increase the danger.

" Previous to concluding this letter, it may not be unimportant for me to add, that I do not confine the practice of puncturing to cases of erysipelas alone, having long been in the daily habit of using it in every other inflammatory state of the skin requiring local abstraction; and I find it so exceedingly useful in the vicinity of old and irritable ulcers, that I have not had occasion to amputate a limb for ulcer of any description ever since I have had recourse to this mode of treatment, though it will be readily credited that we receive a great number of very bad ulcers in this institution, where thousands of men who have been maimed in the naval service are provided with an asylum.

" I remain,
" Dear Sir,
" Your most obedient Servant,
" R. DOBSON."

CASE

OF

ERYSIPELAS,

WITH SOME REMARKS,

By A. COPLAND HUTCHISON, Esq. F.R.S. L.&E.

LATE SURGEON TO THE ROYAL NAVAL HOSPITAL AT DEAL, SURGEON TO HIS ROYAL HIGHNESS THE LORD HIGH ADMIRAL, AND SENIOR SURGEON TO THE WESTMINSTER GENERAL DISPENSARY, ETC. ETC.

Read 13th November, 1827.

SINCE the last meeting of the Society a case of erysipelas has occurred in my practice which appears to possess some interest, at this period, in more than one point of view, and which, with the permission of the Society, I shall briefly detail, offering in conclusion a few remarks on the subject generally.

On Thursday morning the 1st instant, I was requested by Mr. Brooks of Bedford Street, Covent Garden, to see Mr. S. He is 52 years of age, of a spare and relaxed habit, arising possibly from too close an application to business and great abstemiousness in his mode of living. Mr. S. had a few days before received a slight abrasion over the ridge of the right tibia, by his leg being thrust be-

tween the iron steps of a gig, in his hurry to extricate himself, the horse falling upon his knees. The abrasion did not exceed the size of a finger-nail, but was neglected for a couple of days, the patient continuing to walk about as if no such accident had occurred.

When I first saw the disease, there was what I should call a *slight* degree of erysipelatous inflammation, of the erratic species, and of a red brick-dust colour over the front of the tibia, from its tuberosity downwards to within four or five inches of the instep, and extending outwards and backwards to the centre of the gastrocnemius muscle, which was, on one part hereafter to be mentioned, exceedingly painful to the touch. Except in the immediate vicinity of the wound, which had a healthy suppuration, and over the front of the tibia, there was not even the slightest appearance of swelling, glossiness, or shining of the skin. On the contrary, the calf of the leg was remarkably flaccid, and the inflamed skin wrinkled or corrugated, so that there was neither tension nor œdema of any part, except over the front of the bone. The patient's pulse at this time did not exceed seventy, and was small and languid.

Mr. Brooks had been called in, two days before I saw him: he had attended to the state of the bowels; was giving him the sulphate of quinine every four hours, with wine; had applied leeches

to the inflamed surface; poppy-head fomentations and an emollient poultice to the abraded part.

Upon the first view of the case, I did not conceive it to be one in which incisions were at all called for, and therefore recommended a continuance of the same mode of treatment, with the occasional use of an evaporating lotion in the intervals of fomentation, to be applied all over the inflamed surface, except the abraded part, and the quinine and wine to be increased, with the most nourishing diet.

The next day I was startled on inspecting the limb, at the appearance of a mortified patch of integument of the size of a dollar, on the outside of the leg, the patient's pulse at this time continuing of the same strength and frequency. Decisive measures could no longer be delayed, and accordingly I made six or seven incisions down to the muscles of an inch in length, one over the tibia, through the periosteum, two into the sphacelated part which included a portion of the adjoining inflamed surface, and the others in different parts where the inflammation seemed most to prevail: and, to our great satisfaction, on examining the limb six hours afterwards, we found the sphacelus arrested, the patient in comparatively little pain, and matter exuding from the incised parts.

A day or two subsequently there was a small

spot disposed to become gangrenous on the outside of the knee, four or five inches from the nearest incision previously made; one cut of an inch and a half in length through the part instantly stopped its progress, and the disease thus became completely subdued. The incisions discharged healthily; the sphacelated part became detached on the sixth day, leaving a clean granulating surface with a slight insulation of integument between two of the incisions, from which some portions of the fascia were removed; this, with a compress and roller, is becoming adherent to the subjacent parts. Lime-water is poured over the granulating surfaces. There is now no pain in the limb, except when it is exposed to be dressed, and the patient's health, appetite, and spirits, are good. He has continued the wine, quinine, and nourishing diet up to this date, and to-morrow I propose to strap the limb, the pulse being now natural as to strength and frequency.

During the period of inflammatory action in this case, that part of integument which afterwards sphacelated was exquisitely painful to the touch, as has already been noticed, and which circumstance will lead me in such another case to suspect the existence of greater mischief than otherwise could be imagined from existing appearances. This observation is the more worthy of serious attention to the practitioner, because I have since recollected two or three instances of this same species

of erysipelas, where the like symptom of exquisite pain to the touch was followed by precisely the same result. The conclusion, therefore, is, that in such cases we must have much earlier recourse to incisions, by which means fascial or sub-cellular suppuration and gangrene of the parts may be prevented.

From the discussion that took place at your last meeting, when Mr. Lawrence's cases were read, it appeared to some members, as well as to myself, that we should not have recourse to incision in this disease unless in the more desperate cases, such as were described in my original paper in the fifth volume of your Transactions. But it would appear, that in a crowded city, such as London, this disease is occasionally, as in the present instance, so very insidious in its attacks and progress, that if not very much on the alert, the practitioner may find himself deceived, and his patient slip through his hands most unexpectedly; and hence it really becomes an important question whether, as my friend Mr. Lawrence has suggested in his paper, it might not, in the great majority of instances, eventually prove to be the best and safest practice to have recourse to incision at once?

It has been shewn to the Society by the remarks which fell from that distinguished physician,

Dr. Babington, at our last meeting, that a modification of this practice among the old seamen in Greenwich Hospital had uniformly succeeded with the surgeon of that institution. Two of these cases under treatment were, I believe, shewn to Dr. B. on a recent visit to that hospital. I have since seen Dr. Dobson, who informed me that he performs the operation of puncturing the inflamed surface with a lancet, whether on the face or elsewhere, introducing the instrument to nearly a quarter of an inch below the skin; and that he had done so in some hundred cases, without having once failed in completely subduing the disease in a remarkably short space of time. His medical treatment in all these cases corresponds, I am informed, with that usually practised in this country.

Now if this modification of the treatment of erysipelas by incision, for it is still the same practice, succeed as well in the sub-cellular or fascial species of the disease as it appears to have done in the purely cutaneous, I am free to admit that it is a great improvement on my plan, and a still greater on the extension of it by my learned friend Mr. Lawrence. But if my views of the seat of erysipelas phlegmonoides be correct, I feel pretty confident that in certain cases Dr. Dobson's slighter incisions or punctures will not so immediately and effectually, if at all, arrest the

destructive progress of the disease, however early they may be made, particularly when the fascia is involved in it.

I do loudly protest against the practice of making the incisions of such length as recommended by Mr. Lawrence, both as unnecessary, and not so likely to stop the progress of the disease where it is spread over a wide surface, as several smaller incisions made on different parts, where the disease is found to be most active; for it will have been seen, by the closely observing surgeon, that when this disease runs on to suppuration or to gangrene, for example, abscesses or gangrenous patches are occasionally found to have taken place in different parts laterally distant, and having no communication with each other. Now if one long incision be made in a direct line through the middle of the inflamed surface, according to Mr. Lawrence, the disease may be still unsubdued, though greatly lessened on each side of it, to a certain distance. But supposing the disease be found to occupy a space from the great trochanter to the toes, including the whole circle of the thigh, leg, and foot, which I have witnessed in two or three cases, wherein eighteen incisions were certainly made of an inch and a half in length, will one or even two incisions of fourteen inches in length arrest such an extent of disease? My experience teaches me that they will not, and hence it is, that I have stated, that in

such desperate cases we must have recourse to such a number of small incisions, according to the extent of inflamed surface, as will arrest the disease. It appears to me more than probable that the fatal case of erysipelas treated after this manner, and detailed by Mr. Lawrence with so much candour, might not have terminated so, had the incision been confined to an inch or an inch and a half; for it was in this case, if I mistake not, that he made his longest incision; but even here the patient ought not to have been lost, for surely the dresser, or house-surgeon of the hospital, might have secured the bleeding vessels with a ligature: and therefore this case ought not to militate against the practice.

In cases of hemorrhage, I have never once in my practice found a ligature necessary. When as much blood has been abstracted from the incised parts as was desirable, I have very readily stopped it, by elevating the member operated upon above the centre of the circulation; which, with moderate pressure, has succeeded in arresting the bleeding, by the impètus being lessened at the divided part of the artery; and the usual contraction of the mouth of the vessel has been the consequence.

I do hope that my friend Mr. Samuel Cooper will now consider it incumbent upon him to furnish the Society with a detailed account of the

two cases he adverted to in his speech, as having been unsuccessful after incisions; that the profession may be put in full possession of every fact bearing upon this important subject. But from the great mass of evidence already before the profession, in favour of this mode of treating erysipelas, it is not very likely that these two solitary cases can make much against incisions in erysipelas, so uniformly successful in the practice of every other medical man who has adopted them; and therefore I do hope that Mr. Cooper, with his accustomed candour and urbanity, will redeem the pledge he gave to the public, by recalling those opinions he advanced in the third edition of his valuable work, since he has in his speech before this Society acknowledged most distinctly, that he had in his dictionary condemned the practice of incision in erysipelas, untried, and without any experience!

Dutchess Street, Portland Place,
12th November, 1827.

P. S. 30th December, 1827. Mr. S., in whom erysipelas was treated by short incisions, as was related in the foregoing paper, has perfectly recovered.

CASES

OF

TUMOURS IN THE ABDOMEN

ARISING FROM ORGANIC DISEASE OF THE STOMACH;

WITH REMARKS.

By EDWARD J. SEYMOUR, M.D. (Sec.)

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON, AND PHYSICIAN TO THE ASYLUM FOR RECOVERY OF HEALTH.

Read 27th November, 1827.

SEVERAL cases having recently fallen under my observation, in which tumours in the abdomen of considerable size were found to arise from organic disease situated in the stomach, they appear to me worthy of the attention of the Society; first, because very few such cases are on record, and secondly, because in two of them the symptoms which have been considered to characterize organic disease of this viscus were altogether absent.

Among the numerous cases of disease of the stomach related by Morgagni*, one only is to be found in which a tumour was perceptible during

* Epist. 29. Art. 6.

life, and in this instance the pain in the stomach, to which the patient had been long subject, and the constant vomiting which had existed during the latter period of his life, gave sufficient evidence of the seat of the disease.

In fourteen cases related by Lieutaud *, two only are mentioned where the tumour formed by the disease was perceptible externally, and in these the symptoms of pain, vomiting, heart-burn, &c., were sufficient to draw the attention of the physician to the real state of the case.

In Dr. Monro's work on Morbid Anatomy †, a very remarkable case is detailed, in which "a lady had suffered during some time from pain in the epigastric region, indigestion, and wind in the stomach and bowels." On examining the body, a tumour was found on the right side of the navel, of an oval shape and about the size of an orange, which at the time was supposed to be lodged in the colon. On inspecting the body after death, the stomach was found to have fallen down as low as the navel; on opening it there appeared a tumour adhering by its neck to the villous coat. The surface of the tumour "was smooth, and the body of it so firm, solid and tough, that it was cut through with some difficulty."

* Liber primus de Læsionibus Abdominis, Obs. 941.

† P. 190.

Dr. Baillie observes in his work on Morbid Anatomy, "where the person is much emaciated, and the cancerous swelling is situated near the pylorus or along a part of the great curvature of the stomach, it may be felt in the living body by a careful examination by the hand." This implies only that in certain cases such enlargements may be discovered, whereas in the cases which I am about to relate the tumours were visible and of very considerable size.

The essential symptoms of cancer or fungus hæmatodes of the pylorus, enumerated by authors, are pain in the region of the stomach aggravated on taking food, frequent vomiting sometimes mixed with blood, often occurring about half an hour after solids or fluids have been swallowed, sensation of weakness, occasional syncope. As the disease advances, the vomiting increases in frequency and resembles coffee in colour, and there are often accessions of hectic fever with great emaciation.

The disease very rarely, if ever, attacks persons under forty years of age, and is more common in women than in men. It has been very frequently observed in persons subjected either to great fatigue of mind or anxiety. In a great majority of cases there is a remarkably exsanguine appearance in the countenance, even early in the disease.

In the numerous cases related by M. Lieutaud, vomiting was always present, and in the greater number acute pain was experienced in the stomach. M. Vicq d'Azyr, in his very able article Anatomie Pathologique, in speaking of this disease, says, "It is worthy of remark, that as there is *always vomiting* when the seat of the malady occupies the pylorus or its neighbourhood, so deglutition is impeded or altogether obstructed when the disease attacks the cardiac orifice."

"When the disease", says Dr. Monro, "is seated in the stomach, there is great pain in the organ affected, with all the usual symptoms of indigestion, very frequent nausea and vomiting, and the occasional rejection of blood by vomiting, and the patient dies completely exhausted."

Although these symptoms are so common as to be necessarily enumerated in the history of the disease, yet they are by no means uniformly present, two of them sometimes existing in a slight degree only, and occasionally being altogether absent, viz. pain and emaciation.

A very remarkable case is related in the practice * of Dr. Pemberton, where extensive disease existed in the stomach, and no symptom whatever

* Abdominal viscera.

was present during life to mark its nature. A similar case is related by De Haen, where periodical vomiting was the only suspicious symptom, in a patient whose appetite, circulation, and digestion, appeared to be perfectly natural, the evacuations being sufficient in quantity, and of healthy colour *.

In the recent very laborious work of M. Andral, on diseases of the abdomen, several cases of fungus hæmatodes of the pylorus are related; in the greater number of which pain denoting disease of the stomach was altogether absent, but the vomiting and emaciation and exsanguine appearance of the patient, together with the occasional detection of a hardness in the situation of the smaller extremity of the stomach, rendered it difficult not to perceive the nature of the disease. This author is of opinion that no symptoms exist, which can in the living body point out the diagnosis between this disease and chronic inflammation of the stomach.

The first case which I shall relate is one which I had an opportunity of observing in St. George's Hospital, under the care of Dr. Chambers; the characteristic signs of the disease were undoubtedly present in this case, but its extent and the size of the tumour were very remarkable.

* De Inflammatione Membran. p. 182.

CASE I.

Ann Row, æt. 39, unmarried, a cook. Admitted July 11, 1827. Has been subject to occasional pain in the abdomen for several years past, not however sufficiently severe to confine her to bed. About Christmas last she was attacked with vomiting of blood and diarrhœa, with very violent pain in the belly. About two months ago she perceived a tumour at the inferior part of the left hypochondrium, extending to the umbilicus.

The tumour which is hard, unequal, and very tender on pressure, occupies the whole of the epigastric and the umbilical region, extending to within an inch of the symphysis pubis and to the right iliac region; at this latter part (an inch to the right of the navel) it is more elevated, and there is a strong pulsation communicated through it. She vomits occasionally after taking food, but not always; sometimes when the stomach is empty. She describes what she vomits to be bitter and sour. Bowels very much relaxed, tongue clean and moist and of natural colour; no catamenia for three months; pulse 96, very weak; urine scanty; she is much emaciated.

12th. Sickness very distressing, bowels open. (Haust. Salin. Efferves. 6tis horis c. T. opii ♏ v.)

16th. Hirudines viij tumori. Fotus papaverum abdomini admovend.

℞ Bismuth. Subn. ℈ss.
Pulv. Tragacanth. C. gr. v.
M. Ft. Pulv. t. d. Rept. alia.

18th. There is an equally diffused swelling of the parts about the right clavicle, extending to the right axilla, which is very tender to the touch; the mamma is not affected, the right arm and hand are œdematous. (Hirudines viij tumori. Fotus partibus tumidis admov. P.)

20. P. 23d. Sickness less severe, constant purging, great tenderness in the swoln part, pulse natural, tongue healthy, skin cool, emaciation increased. (Hirudines viij regioni tum. Postea applic. Cataplasma Lini.)

℞ Acidi Hydrocyanici Medic. ♏ j.
Decoct. Hordei ℥j. M.
Ft. haust. t. d. sum. Rept. alia.

25th. Died.

Sectio Cadaveris.

26th. The cardiac extremity of the stomach was healthy; but on cutting the anterior surface of the pyloric portion the coats were found considerably thickened, and on the inner surface an irregular tumour presented itself, occupying about two thirds of the circumference of the stomach, and only leaving the anterior part free. The

tumour began about the situation of the pylorus, and its greatest length was about five inches extending towards the left side. It projected about an inch into the interior of the stomach, the surface being very uneven, several round masses rising upwards from the body of the tumour. The surface was for the most part of a reddish yellow colour, some parts nearly brown, and here and there complete sloughs had been formed. The surface of the duodenum and of the stomach was very vascular around the tumour.

In the centre of the tumour an opening about an inch and a half in diameter, with sloughy circular margin, led backwards into a cavity containing about two ounces of fetid pus. The whole surface of the cavity being covered with a brown sloughy membrane like the margin of the opening, its parietes were formed by adhesions between the stomach, colon, and duodenum anteriorly, and by the spine behind. At the margin of the opening of the stomach nearest the duodenum, a sloughy tumour about the size of a small orange projected from the general mass into the abscess, and still more to the right side another larger tumour was perceptible, both from the front of the abdomen and at the bottom of the diseased mass of the intestines and stomach, having the duodenum, colon, and stomach adherent to the anterior surface. This was the only part of the whole disease which had not yet ulcerated, and it seemed to be com-

posed of glands united together; it was soft and pulpy and of a light colour, like the usual appearance of fungus hæmatodes. The remainder where ulcerated was also soft, and resembled very much the usual surface of a tumour composed of fungus hæmatodes when it has ulcerated through the common integuments.

CASE II.

Mr. C. æt. 59, a gentleman who had always enjoyed good health and was remarkably temperate in his habits, but much occupied by anxious professional business, consulted me in the month of November 1825, being affected with pain in the region of the bladder, particularly felt after voiding his urine, which was high coloured and deposited freely uric acid. The warm bath and the use of soda and opium shortly relieved these complaints; a visit to the sea-side and the moderate use of tonics completely restored him.

About November 1826, he mentioned to me that he was occasionally troubled with water-brash, which he described as a small portion of tasteless fluid rising occasionally into his mouth, unattended by pain or any uneasiness whatever. His appetite was extremely good, sleep undisturbed; he had no pain in any part of his body. His pulse was not strong, but regular and of natural frequency, and he described himself to be in good

health. He was recommended twenty minims of Liq. Potassæ in lime water twice in the day, but the inconvenience appeared to have been so slight that he did not comply with the prescription.

On the 13th March 1827, while visiting another patient in the family, I observed that Mr. C.'s countenance and manner betrayed considerable indisposition, and I inquired if he were suffering from return of pain in the bladder. He replied he thought he had taken cold, and that he was much harassed by business. He said he felt as if he required opening medicine. I ordered him an aperient, and desired he would lie in bed in the morning that I might examine his abdomen, as on pressing him through his dress there appeared some tenderness present.

14th. The patient being in bed, the symptoms were as follow: bowels freely open from the medicines, dejections loose, but of good colour, pulse 110, extremely weak, urine very turbid, tongue red and shining, appetite good, great sensation of debility, with an exsanguine appearance of the countenance, the less remarkable as the patient had always been unusually pale.

About midway between the umbilicus and superior anterior spinous process of the left ilium, a tumour was observed of the size of a large orange, extremely hard, extending over about half an inch

to the right side of the umbilicus, and an inch below it. This tumour was adherent to the integuments, was rather moveable, and there was considerable tenderness on pressure. Notwithstanding the size of the tumour, its tenderness, and its prominent figure, the patient, until my examination, was totally ignorant of its existence. The apparently rapid growth of the tumour, its hardness and irregularity, combined with the bloodless appearance of the patient, and the great and sudden loss of strength experienced, induced me to believe that the disease was of a malignant nature. A dozen leeches were ordered to the part, and a consultation took place in the evening with Dr. Nevinson. Dr. Nevinson was likewise of opinion that the disease was of a malignant kind, but no decision could be formed as to which of the viscera it affected particularly. (Hirudin. xij tumori; capiat Pil. Sapon. c. Opio gr. iij h. s.)

℞ Mist. Camph. ʒx.
Sp. Æther. Nitr. ʒss.
Confect. Arom. ℈j.
M. Ft. haustus 4tis horis sum.
(Light nourishment.)

15th. A consultation took place with Mr. Brodie, who agreed in the opinion that the disease was fungus hæmatodes. The leeches were ordered to be repeated. Evaporating lotions to the tumour. The internal medicine to be repeated.

On the 18th, the tumour having increased, a consultation took place with Mr. Brodie and Sir A. Cooper. The latter gentleman was of opinion that the great intestine on the left side adhered to the parietes of the abdomen, that the inner coat had ulcerated, and a tumour was formed whose contents consisted of gas, ill-conditioned matter, and fæces. Poultices and fomentations ordered. The soap and opium pill repeated at bed-time.

℞ Infus. Gentian. C. ʒx.
Infus. Rhei ʒij.
Pulv. Ipec. c. Opio, gr. iij.
Subcarbon. Sodæ exsicc. gr. v.
M. Ft. haustus t. die sumend.

23d. Some fluctuation being perceived in the tumour, an opening was made to the left, a little above the umbilicus with a lancet; about two ounces of fœtid sanious pus escaped from the orifice. Some hæmorrhage occurring, the pulse in the evening became extremely small and feeble, tongue red with a brown centre, countenance much sunk, bowels purged.

℞ Pulv. Cret. C. ʒss.
Confect. Arom. ℈j.
T. Opii ♏. v.
Mist. Camphoræ ʒx.
M. Ft. haustus 4tis horis sumend.
(Vini Rubri ℥ij ter in die.)

26th. The opening discharged freely, pulse 100, strength much improved, aphthæ in the mouth.

℞ Infus. Cuspariæ ʒx.
Confect. Arom. ℈j.
Pulv. Cretæ C. ℈j.
M. Ft. haustus ter die sumend.

The relief experienced by letting out the confined matter was of very short duration. The tumour enlarged as the cavity of the abscess filled up, and the condition of the patient on the 17th of April was as follows: The tumour occupies the whole of the umbilical region, being about six inches in breadth, and four in length. No pain whatever is experienced on pressure, or at any period. The cavity of the abscess filled up about one half. Bowels slightly relaxed. No vomiting or nausea. Tongue clean, less red and shining. Appetite good. Sleeps well. Pulse 100, weak.

℞ Infus. Cascarillæ ʒx.
Canell. Alb. in Pulv. ʒss.
T. Opii. ♏. iij.
Syrupi ʒss.
M. Ft. haustus ter in die sum.

It now appeared expedient to endeavour by all the means in our power to check the growth of

the tumour, and in such a case the various remedies which have been insisted on by authors, for promoting the dispersion or absorption of morbid growths, were fairly to be tried, however small the hopes of success which resulted from their employment.

Several blisters were applied in succession over the tumour, without affording any advantage. The tumour appeared inert, producing no pain on pressure, or during the whole process of digestion, which was uniformly to all appearance healthy, one natural evacuation being voided in the twenty-four hours; and when (which was a very rare occurrence) this was deficient, a small dose of castor oil relieved the difficulty. The only bad symptom was the sense of extreme debility, and occasionally slight syncope.

On the 20th of May, a drachm of weak mercurial ointment was ordered to be rubbed in over the tumour daily, and three grains of blue pill given at bed-time. The cascarilla and canella, from which the patient expressed himself to derive relief, was continued. This course was persevered in for nearly three weeks, and given up without appearing to have in any way contributed to the diminution of the tumour, or the amendment of the patient's general health.

The action of iodine is at present little under-

stood; but that it occasionally exercises very extraordinary power in the dispersion of morbid growths, is now generally admitted, at the same time that in the present state of our knowledge its apparent want of uniform success, and the terrible influence it exercises over the nervous system, even some weeks after its use has been discontinued, require great caution in its administration.

Half a drachm of the ointment of hydriodate of potass was rubbed in every night and morning, and five drops of the tincture given twice in the day for more than a fortnight, when the increased sense of fainting and diminution of the patient's strength obliged its discontinuance.

The beneficial effect occasionally produced by the internal use of the caustic alkali, especially in steatomatous tumours, suggested the propriety of employing this remedy. Twenty drops of the liq. potassæ were ordered to be taken thrice daily, in a little barley water, this quantity being gradually increased to twenty-five minims five times in the twenty-four hours, which was borne without the slightest uneasiness. During three weeks that the use of this remedy was continued, a sensible amendment was perceived. Strength increased; the skin became of a healthier colour, and the tumour certainly was somewhat diminished. In consequence of this amended state, the patient left

town for his seat in the country, in the middle of July. On the first of August he returned to London, having perceived an increase in the tumour during the preceding two days, and having experienced a return of the rising of tasteless fluid into his mouth, a symptom which had wholly left him for several months.

My attention having in the mean time been called to the case of Row, which I have first detailed to the Society, I was satisfied that the malignant growth was in the stomach itself, and accordingly informed the patient's friends. This opinion was confirmed in consultation by Mr. Brodie and Dr. Chambers. After the patient returned to London, the extr. conii and the liquor arsenicalis were employed in full doses, but without any perceptible good effect. The patient continued to decline, his hands and feet were œdematous, and his strength became so greatly impaired that he required the support of considerable quantity of stimulants, in order to maintain life and warmth.

After growing weaker and weaker through the month of September, he expired on the 2d of October without pain, having experienced a feeling of complete exhaustion, and presented an appearance of the utmost emaciation for several days previously.

The most singular circumstance attending this case was the perfect manner in which digestion was performed during the progress of so extensive a disease of the stomach. The patient's diet consisted of broth, arrow-root, plain animal food, and white fish, and as the disease advanced, he was permitted to drink weak brandy and water with his dinner, which added greatly to his comfort by counteracting the extreme sensation of debility. At no period of his disease did he experience any pain after taking food; at no period was his food returned by vomiting. The only circumstance which could draw the attention of the physician to disease of stomach was the water-brash, but this occurred rarely in very small quantity and was attended with no pain. The appetite continued natural until two days before death.

The body was opened twenty-seven hours after death by Mr. Brodie, assisted by Mr. Cæsar Hawkins. On the external surface of the body several spots of purpura were perceived, and a tumour was easily felt through the parietes of the abdomen, with an opening in its centre, a little above and to the left side of the umbilicus, discharging some dark purulent fluid. The cavity of the abdomen contained about three quarts of water; on the removal of which, the tumour was found to be formed by the stomach, adhering extensively

to the parietes, to which the transverse part of the colon and the omentum were also joined. The stomach was opened on the posterior part, and the cardiac portion and duodenum were found to be quite healthy, the pyloric half alone being the seat of disease *. It appeared to consist of a thickening of the coats of this part of the stomach, in some parts above an inch in thickness, with an irregular tumour growing from its whole circumference, of the nature of fungus hæmatodes. The whole interior surface was ulcerated, and several portions of the tumour projected into the cavity of the stomach. The tumour was soft, and highly vascular in the inner part, and gradually became firmer and whiter towards the peritoneal surface, whence several white bands ran in an irregular manner towards the interior of the tumour. The anterior part of the stomach was the thickest, particularly where it adhered to the muscles of the abdomen; and in it several abscesses were discovered, one of the largest of which was the cavity in which the opening on the surface of the abdomen terminated. The œsophagus near its junction with the stomach contained a small cyst of fluid, resembling an hydatid in appearance, and of the size of a filbert. The liver was rather darker than usual, but otherwise healthy, except that in the left lobe several tubercles were observed of the size of a pea, of a

* See Plate I.

white colour, and of the consistence of soft cartilage. All the other viscera appeared sound.

CASE III.

The following case I had an opportunity of observing under the care of Dr. Hewett, physician to St. George's Hospital, who has obligingly permitted me the use of his notes in his hospital case-book.

John Rae, æt. 40, applied to be admitted Wednesday, September 12th, 1827. About fifteen weeks ago, being in robust health, he fell suddenly on his back from a height, and was taken up insensible. He soon recovered his faculties, and did not appear to have sustained any serious injury. About twelve weeks ago, he experienced a difficulty in the digestion of his food. To use his own expression, "his victuals did not appear to digest properly, but to stop for three or four hours at a spot:" which he pointed out, and which corresponded with the cardia; the food then passed onwards without being rejected by vomiting. These symptoms were removed by some pills, in the course of three or four weeks. Pulse 100, regular and soft; tongue foul. He has had no evacuation from his bowels since last Sunday week, with the exception of one costive stool, after having taken castor oil. On Saturday afternoon he fainted twice from weakness, not from pain,

while making ineffectual efforts to pass the evacuation. (Capiat Ol. Ricini 3iij statim, et 4tis horis donec semel respond. alvus. Injiciat Enemat. oleos. ℔ij post horam unam.

℞ Mist. Camphor. 3xj.
Sp. Æther. Sulph. 3ss.
Syrupi 3j.
M. Ft. haustus appropinquante syncope sumend.

13th. Three evacuations from the medicine, of a dark muddy colour, but presenting no traces of blood. Urine reported to be high coloured, nearly resembling porter in appearance. Bowels have been torpid during the last nine or ten weeks, but he did not notice the colour of his evacuations. He does not now experience any pain, except on forcible pressure about the epigastrium. Towards the right as well as the left hypochondrium and umbilicus, there seems to be some induration of the stomach, and perhaps also of the liver. Pulse 100, regular, soft. Skin natural. Tongue muddy, no yellowness of conjunctiva; he has a peculiarly exsanguine appearance, but has never had any hæmorrhage. That the tumour is of a malignant character, is rendered probable by the expression of countenance, the rapid emaciation, and general progress of symptoms. Capt. Ol. Ricini 3iij c. m. Injiciat Enema oleosum vespere.

℞ Submur. Hydrarg. gr. j.
Extr. Conii gr. viij.
M Ft. Pilulæ ij. 8vis horis sumend.

14th. The examination to-day leaves no doubt that scirrhus of the stomach exists to a considerable extent, more particularly affecting the pyloric portion. Tongue clean and moist, his appetite is good, and he feels no inconvenience after swallowing his food. He was now ordered fourteen drops of the solut. hydriodatis potassæ (hydriod. pot. 3ss. aq. distill. ℥i) every six hours.

Extr. Conii gr. vj 6tis horis intermediis
Repet. Enema Oleos. Interm. Calomel.
(Beef Tea.)

He pursued this plan, augmenting gradually the medicine, on the 19th to twenty drops, on the 27th to twenty-four drops, with at least no disadvantage. His bowels were regular, he was entirely free from pain, and he relished his food. On the 1st of October he was attacked with diarrhœa, which caused the use of the solution to be suspended, and opiates substituted for it. The purging, though occasionally restrained, continued to increase, and he died, apparently exhausted, on the 15th of October.

In the different examinations which were made

subsequently to the 14th of September, it was observed that a great mass of the tumour varied its situation according to the position of his body, descending nearer the umbilicus if he sat up in his bed, and nearer the right or left hypochondrium according as he lay on his right or left side. Dr. Hewett also pointed out the peculiarity of the continuance of the appetite and the exemption from vomiting in this case, as he had done in the case of John Clapp, who had died some months previously, while under his care in the hospital, with a similar but still more extensive disease of the stomach and duodenum.

Sectio Cadaveris *.

The greater part of the stomach seemed healthy, but at the pylorus a tumour was found, as large as a man's fist and nearly globular in shape, occupying the anterior and lower part of the pyloric extremity. A small part projected over and was attached to the duodenum, but most of the tumour formed part of the circumference of the stomach in the situation mentioned, leaving the posterior and upper part of the pylorus free from disease, and not even thickened. The tumour, near its circumference, was hard and white in texture, apparently attached only to the outer part of the coats of the stomach; but in the inner

* See Plate II.

surface of the diseased mass the coat had ulcerated, and a sloughy mass was exposed having a cavity in the centre which communicated with the cavity of the stomach, with irregular projections of a dark brown or blackish colour. The arch of the colon adhered slightly to the tumour, but was unaffected by the disease. A portion of the œsophagus which was cut off with the stomach, and which was about one inch and a half in length, was very much thickened and hardened in its muscular texture, the mucous coat being still healthy, and the cardiac portion of the stomach was also free from disease where it joined the œsophagus.

The liver * had a large quantity of soft white tubercles, with yellow portions intermixed, and in some parts more vascular than usual. Where they were distinct their diameter was one or two inches, and more vascular in the centre; but many of these had coalesced, so as in some parts to lose the tubercular appearance. They were soft and easily broken down, and could readily be detached from the rest of the liver, which was quite healthy in appearance; and the whole liver being enlarged, the actual quantity of healthy structure was not much less than usual.

The transverse branches of the vena portæ

* See Plate III.

seemed quite choked with a similar diseased structure, which adhered to the inner coat, and extended into many of the smaller branches, so that if a portion of tumour was torn, the vessels filled with the new structure could be separated from the actual tubercles, and were seen extending like cords into the healthy structure of the liver, although in a section it was difficult to distinguish the cut surface of the tumour in the vessels from the tumour which was external to their coats. It was difficult to see any channel by which the blood could have passed, so completely were the branches of the vena portæ obstructed; yet in the healthy part of the liver the vessels were seen to be still pervious.

In the last two cases, it is to be observed, that tubercles were found in the liver, in the second case in a crude state, and in the last in a very advanced stage of the developement. These are exactly the tumours described by the French authors, M. Laennec and Andral, under the name of (tumeurs encephaloides), and of the symptoms of which, during life, with the appearances on dissection, the latter author has lately given a very detailed description in his valuable work "Sur les Maladies Abdominales."

There can be little doubt that the disease in the stomach and that in the liver are of the same na-

ture, modified only by the structure in which they are found, and (unlike true cancer, which appears often a local disease, affecting parts in juxta-position, and, secondarily, the constitution,) to be the result of the same action of vessels in different structures at the same time. This would appear from the following facts:—1st. By the observations made by Morgagni, Farre, Langstaff, Wardrop, Bayle, Laennec, and Andral, of the simultaneous occurrence of this organic disease in different viscera. Dr. Farre has related a case where tubera of a structure similar to those which I have shewn to the Society were found in the brain, bronchial glands, liver, and kidney, in the same individual. M. Bayle relates an instance where he found them in the brain and lungs. In the collection of preparations of morbid parts in the possession of Mr. Brodie, there is a specimen of the fungus hæmatodes of the liver (tubera diffusa), scirrhus of the breast, and a disease of the uterus, apparently similar to what has been described by Dr. Clarke under the name of cauliflower excrescence, taken from the same individual. Another circumstance worthy of observation, in the third case, is the obstruction in the transverse branches of the vena portæ, by a deposition of matter similar to that which composed the tubera in the liver. In Mr. Langstaff's excellent paper on fungus hæmatodes, in the eighth volume of the Transactions of the Society, several cases are related (pages 285. 304),

in which the veins in the immediate vicinity of the diseased structure were found choked by a similar deposition.

This subject, viz. the matter of fungus hæmatodes being found in veins unconnected with alteration of their coats, and in the centre of large coagula, consequently, probably, arising from an alteration in the chemical composition of the blood, has recently attracted the attention of the Académie de Médecine at Paris, in consequence of two papers on the subject by M. Velpeau *.

At the meeting of the Academy M. Beclard stated that he had found this formation, in one case, in the interior of a clot which filled the heart and principal blood-vessels. In another case a similar mass was found filling the iliac veins and vena cava.

What, then, is the nature of the disturbance in the due performance of the laws of the economy, in its circulation, absorption, or secretion, which immediately precedes the formation of these diseases?

It appears to me to present none of the ordinary phenomena of inflammation, nor is its termination in any manner similar to the terminations of that morbid process as far as they are at present un-

* Revue Médicale, February and March, 1825.

derstood, as effusion, suppuration, deposition of lymph, or hepatization. It arises often without the unfortunate patient being aware of its commencement, and proceeds without pain, redness, or swelling, or heat of the affected part, these not being observed until its size, or encroachment upon neighbouring parts, produces secondary attacks or alterations in contiguous textures, which rouses the attention of the patient. The exsanguine appearance of the patient, even at a very early period, and the uncommon depression of vital power which he experiences, would lead to the belief of a constitutional cause, either an alteration in the constituents of the blood, from which these diseased products are separated by the ordinary secreting power of vessels, or from a morbid alteration in the secreting powers themselves, or from both of these causes.

Before concluding, I may be permitted a few remarks on the treatment of a disease, which consists only, in our present state of knowledge, in the alleviation of pain, or in directing means to retard its progress. In several cases I have found pain and vomiting, when they attend this affection, effectually relieved for a considerable time by the administration of the Prussic acid.

CASE I.

A middle aged woman was attacked with all the

symptoms of this complaint; constant pain, aggravated on taking either food or medicine, which resisted all usual remedies. Venesection, leeches to the pit of the stomach, blisters, full doses of conium, hyoscyamus, belladonna, and opium, failed in giving the smallest relief. Two minims of the Prussic acid given twice in the day procured a calm of a week's duration, and afterwards, whenever repeated, some relief was obtained. The dose was carried up to ♏ iv. thrice in the day, beyond which quantity it appeared dangerous to employ it.

CASE II.

A woman, æt. 45, who had been exposed to severe affliction, complained to me of pain in the region of the stomach, aggravated on taking food; constant vomiting; a hardness was perceptible in the great curvature of the stomach: no ordinary preparation had relieved her sufferings, which had lasted four months. Two minims of the Prussic acid, directed thrice daily, had the effect of producing an entire suspension of the symptoms during a fortnight.

It ought to be stated here, that the preparation used was that known under the name of Scheele's medicinal acid.

In cases where pain and vomiting are not pre-

sent, I should be induced to employ large doses of the liquor potassæ, from the advantage derived temporarily in the second case, even at an advanced period. I need scarcely observe, that this remedy is only adapted to similarly insensible tumours. Rest appears to be essentially necessary, exercise uniformly promoting the rapid increase of the disease.

OBSERVATIONS

ON

DEPOSITIONS OF PUS AND LYMPH

OCCURRING IN THE LUNGS AND OTHER VISCERA, AFTER INJURIES OF DIFFERENT PARTS OF THE BODY:

By THOMAS ROSE, Esq. M.A.

LATE OF BALLIOL COLLEGE, OXFORD: SURGEON TO ST. GEORGE'S HOSPITAL.

Read January 8th, 1828.

IT has long been known to pathologists and surgeons, that abscesses occasionally occur in some of the principal viscera of the thorax and abdomen in consequence of injuries of the head; and that, from the same cause, purulent effusions sometimes take place into the cavities of the pleura and peritoneum.

If we consult the writings of Morgagni, we shall find that so curious a fact did not escape the notice of that distinguished anatomist*. He tells us that Valsalva was induced, by his own ob-

* Vide Morgagni on the Seats and Causes of Diseases, translated by Dr. Alexander, Vol. III. p. 100. et seq. Ed. Lond. 1769.

servations, to say that the viscera of the thorax were sometimes affected in wounds of the head, and that he might have been so also by those of others, as Nicolaus Massa had, in 1553, met with apostemata in the thorax of a man who died delirious and paralytic, in consequence of a wound received upon the right side of his head, who had been known to be previously in good health, and not to have complained of pain in his breast, nor been troubled with cough, even after he lay ill of the wound: and as Marchetti, whose observations were better known than those of Massa, and were contained in the Sepulchretum, had often found the lungs and the pleura eroded after injuries of the head, and half the cavity of the thorax filled with pus, and had expressed his conviction that, in such cases, the matter descended from the head into the cavity of the thorax.

Morgagni further informs us, that there are some who have found pus in the belly, as the same Marchetti, who had even found a taint and purulent pustules in the spleen; that Bohn mentions the pleura, the lungs, and the spleen promiscuously, and that none of these omit the liver, which, by most others, is mentioned, as the only viscus into which pus can be carried after wounds of the head.

To show however that the latter opinion is erroneous, Morgagni states that it never happened to him to see the liver thus affected, and that Val-

salva in his numerous dissections only met with it once, and then matter was at the same time translated into the lungs also, and, in great quantities, into the cavity of the thorax itself. He refers us to Molinelli for a further confirmation, who had seen pus translated into different viscera, and not into the liver, and in some cases into the liver certainly, but just in the same manner from other wounded and ulcerated parts as from the head. According to Molinelli, however*, the viscera thus affected were always in the number of those contained in the belly.

Morgagni disproves by his own dissections, and by those of Valsalva, the notion, that had been entertained by Marchetti, of the matter descending from the wound in the head into the cavity of the thorax. He illustrates his observations by four cases from Valsalva, in which the lungs were found diseased after wounds of the head. In one of these the patient, who was a young man, survived the accident more than two months. On dissection, it appeared that matter had formed under the dura mater, and that the lungs were hollowed out by various small abscesses. It is possible that, in this case, some previous disease may have existed in the lungs, and been brought to a more speedy termination by the mischief in the head; but the other three cases, which he refers to, were much

* Vide Morgagni, Vol. I. p. 786. Same Edition.

more rapid in their progress, and in them the abscesses in the lungs obviously arose from the injuries which had preceded them,—one patient dying on the 14th, one on the 22d, and the third on the 25th day after the accident, and none of them having previously shewn any tendency to disease of the chest.

In the First Volume of the Memoirs of the French Academy of Surgery *, M. Quesnay, in a treatise on the operation of the trepan, gives a case of abscess in the liver, which followed a fracture of one of the parietal bones. The patient was conveyed to the Hôtel Dieu, and placed under the care of M. Boudon. On the tenth day after the accident he was perfectly tranquil, but he afterwards fell into a state of heavy and very disturbed sleep, accompanied by occasional rigors. It being supposed that effusion had taken place under the dura mater, M. Boudon, on the 14th day, removed two portions of the parietal bone with a trephine, and divided the dura mater, by which he gave exit to a spoonful of extravasated blood. After the operation, the rigors continued to recur, the patient complained of a sharp pain in the right hypochondrium, became comatose, and died on the 17th day from the time of the accident. It had been suspected, previous to his death,

* Mémoires de l'Académie Royale de Chirurgie, Tom. I. fol. 147. Paris, 1819.

that a deposition of matter was forming in the liver, and, on a post-mortem examination, an abscess was found in the substance of the great lobe of that viscus.

This case is very analogous to one which occurred several years ago in a public hospital of this metropolis, where an eminent surgeon performed the operation of trepan under similar circumstances:—A dustman was brought into the hospital in consequence of having received a blow on the side of his head, which had detached a large flap of the scalp, and denuded a considerable portion of one of the parietal bones. The man was for a day or two extremely noisy and delirious, but these symptoms gradually left him, and he appeared, for a fortnight, to be recovering favourably; after that period, febrile symptoms came on, with violent rigors, which were followed by profuse sweats. The formation of pus being clearly indicated, it was judged adviseable to remove a part of the parietal bone where the pericranium had been most detached. This was done, but the inner table of the bone was found adhering to the dura mater, which was perfectly healthy, and the operation of course afforded no relief. After the patient's death it was ascertained that a very large collection of matter had formed in the cavity of the pleura, and that the brain and its membranes were free from disease.

M. Bertrandi and M. Andouillé have each given a paper in the third volume of the memoirs already referred to*, expressly treating of abscesses in the liver formed in consequence of injuries of the head. The former of these authors attributes their formation to the obstruction to the return of blood into the right auricle, by the vena cava inferior, in consequence of the additional quantity which the cava superior has to bring back from the head. Passing over this theory, in the correctness of which M. Andouillé fully concurs, we shall find in the paper of Bertrandi some valuable information, and several very interesting cases of this disease. He remarks that authors, who have treated of these abscesses, have seldom been aware of their existence until they have discovered them in examinations made subsequent to the death of their patients; and he states that in his dissections he has often found such abscesses in those who have died of wounds of the head, where no suspicion whatever of their formation had been previously entertained. He further remarks that abscess of the liver from this cause is situated deep in the substance of that viscus.

If we refer to the valuable treatise on wounds of the head contained in the surgical works, or ex-

* Vide Mémoires de l'Académ. Royale de Chirurgie, Tom. III., fol. 439 et 452.

posé of the doctrine and practice of Desault, published by Bichat, we shall find that Desault considered abscess of the liver to be one of the most common effects of injuries of the head; certainly much more common than is consistent with the experience of others. In speaking of the erysipelas which attends wounds of the scalp, he observes, " qu'il est rare que les symptomes deviennent violens, sans que le foie ne s'affecte, ou même qu'un dépôt ne s'y forme."

Desault regards these formations of matter as a consequence of the disturbance excited in the nervous system, and observes that they form a complication which in cases of concussion of the brain is almost inevitably fatal. Richerand, in his Nosographie Chirurgicale*, endeavours to rebut this theory, and to prove that these abscesses must depend upon some injury which the liver had sustained at the time of the accident. But this explanation is certainly erroneous, as it will be seen that they occur under circumstances where such a supposition cannot possibly be entertained.

It is curious that, whilst Desault represents abscesses of the liver as one of the most common consequences of severe wounds of the head, our countryman, Mr. Pott, who has treated so fully of

* Vide Nosographie Chirurgicale, Tom. II., fol. 220. Paris, 1812.

the various effects resulting from these wounds, should have been entirely silent on the subject; and that the appearances which are presented by the viscera thus affected, should in like manner have escaped the notice of Dr. Baillie. Mr. Pott* has given one case in which a fatal peripneumony followed the operation of trepan, but he appears to have regarded that disease as an accidental occurrence, and not as a consequence of the mischief done to the head.

Mr. Samuel Cooper has expressed his suspicions†, "that the affection of the liver and primæ viæ (after injuries of the head) has been exaggerated by the French surgeons, since English surgeons, in their dissections, certainly do not find the liver frequently inflamed and suppurated in patients who have died of concussion."

But although abscesses of the liver, under such circumstances, may not by any means be so common as Desault would lead us to suppose, yet their occurrence in that, as well as in other viscera, after injuries of the head, seems to me to have been too little considered in the writings of English surgeons. Nor is it after injuries of the

* Chirurg. Works of Percivall Pott, Vol. I., p. 127. London, 1779.

† First Lines of the Practice of Surgery, Vol. I., p. 399. London, 1819.

head alone, as the learned authors, whom I have hitherto quoted, would lead us to infer, that such abscesses are formed. They equally follow wounds of other parts of the body; and, during the Peninsular war, I met with several instances of their occurrence, in the lungs particularly, after amputations, and after other wounds of the extremities. I communicated these circumstances to Sir James M'Grigor in 1813, being then with our troops in Spain, requesting, that as the opportunities for observing the phenomena resulting from every description of injury to the body were at that time so extensive, he would inquire if similar affections of the lungs and different viscera had been observed by others*. I pointed out to Sir James as an excellent illustration of the disease in question, a case given by M. Larrey in the first volume of his "Mémoires de Chirurgie Militaire", three volumes of which interesting work I had then recently received, in which case abscesses both in the liver and in the lungs followed amputation of the arm. The case† is that of General Caffarelli, and occurred during the occupation of Egypt by the French. The General died on the nineteenth day after he had undergone the operation, the wound from which was going on fa-

* Sir James, in answer to this communication, informed me that Staff-surgeon Irwin had lost a patient of disease of the lungs following amputation of the thigh.

† Vide Mémoires de Chirurgie Militaire, et Campagnes de D. J. Larrey, Tom. I., fol. 306. Paris, 1812.

vourably, and on the sixth day after the attack of those febrile symptoms, which, as was ascertained after death, had indicated or led to the derangement of the internal organs. M. Larrey attributed the fatal result, and the disease of the viscera, to the effects of the Egyptian climate, with fatigue and other causes; and did not at all seem to suppose that they were connected with the previous wound or operation. But in the fourth volume of the same work, which was published at a subsequent period, that is after the peace of 1814, he gives* an instance of a large abscess of the liver, in a Prussian soldier, occurring after a compound fracture of the arm. With a view to destroy in this case an artificial joint, M. Larrey introduced a seton between the fractured portions of bone, which, after a few days, was followed by enormous tumefaction and suppuration of the arm, and by an abscess in the liver which burst into the cavity of the abdomen. The period of the man's death is not stated. M. Larrey observes, that no doubt could be entertained of this abscess of the liver being attributable to the irritation and inflammation of the arm, as the man had not previously experienced any indisposition which could lead to the suspicion of his having hepatic disease. He gives in the same volume three other cases of abscess of the liver, fol-

* Vide Mémoires, &c. de M. Larrey, Tom. IV., fol. 229. Paris, 1817.

lowing wounds of the head, and he states his opinion, that such abscesses are owing to the irritation excited in the liver by sympathy with the inflammatory action which had been established in the fibrous membranes of the cranium, or of the bones of the upper or lower extremity, but chiefly, he says, those of the same side, and by the metastasis to this viscus of the " miasmes ichoreux, ou d'un fluide plus ou moins acre et subtil." He adds that the communication of these morbid humours with the hepatic system, takes place more easily when they have not to cross the median line.

Mr. Hennen has also given three very interesting cases of the same nature in his work on the Principles of Military Surgery *. Two are cases of disease of the lungs, and one of disease of the liver, and all followed amputation. They do not tend to confirm M. Larrey's notion of the morbid humours not crossing the median line.

It appears therefore that the occurrence of abscesses in the viscera as a consequence of injuries of the head, more especially where these abscesses take place in the liver, has long been generally known, and that the circumstance of their follow-

* Vide Principles of Military Surgery, by J. Hennen, fol. 271. Lond. 1820.

ing wounds of other parts of the body has of late been clearly pointed out, but the silence of the most distinguished pathological writers of this country respecting them, and the little notice which has been taken of their peculiar appearances, have induced me to think that the subject, although it has not any novelty to recommend it, might not be deemed entirely unworthy of the attention of this Society.

I have seen repeated instances of the disease in the lungs, in the liver, and in the spleen, and after various accidents. I have not been able to discover any peculiarity of constitution which could be regarded as predisposing to it. Many of the patients were young and healthy individuals, who, until the time when they met with the accidents, had never been affected with disease. Some of them were treated on the strictest antiphlogistic plan throughout, in consequence of the nature of the accident they had experienced. In others (in compound fractures for instance), as soon as the first inflammation had subsided, means were used for supporting the strength of the system. No difference as to the formation of the internal abscesses could be observed. In all the cases which I have seen, these abscesses took place at some period between the end of the second and that of the fifth week after the accident which gave rise to them.

The theories which ascribe their formation to injury done to the liver itself at the time of the accident, to obstruction to the entrance of the blood into the right auricle through the vena cava inferior, or to a direct communication for the transmission of matter from the head to the cavity of the thorax, are all obviously absurd. That of Desault, which attributes them to the disturbance of the nervous system, resulting from the injury, is probably the only explanation which can be given of their cause. They are to be classed amongst the effects of constitutional irritation arising from local injury, and are certainly striking illustrations of the irregular action in the vascular system to which that irritation may give rise. The attention of the members of our profession has lately been directed to this most important subject by the very valuable work of the President of this Society*, and it is to the principles which he has so ably illustrated that I should look for an explanation of the phenomena which I am now attempting to describe.

It is not very uncommon to find inflammation or congestion taking place in particular organs immediately after the constitution has rallied from a shock given to it by a severe accident or surgical operation, though that accident or operation be in

* Vide An Inquiry concerning Constitutional Irritation, by Benj. Travers, Esq. F.R.S. Lond. 1826.

a part of the body remote from these organs. In such cases the symptoms of inflammation are sufficiently marked; and should the disease proceed to a fatal termination, the appearances in the affected organ would, no doubt, correspond with those produced in it by inflammation or its consequences arising from any other cause. But the affections of the viscera, to which I have referred in this paper, have a peculiar character; and it appears to me that this may, in some degree, be accounted for by the rapidity wherewith, in the state of the constitution during which these abscesses occur, any congestion or inflammation, in whatever part it took place, would be followed by effusions of purulent fluid and of lymph. It is at the time when the parts, in which the injury took place, are in a state of suppuration; and in particular when, from the nature of these parts, or from the confinement of the matter, great irritation of the system has been for some time kept up, that such internal abscesses are apt to form; and it often happens, as is remarked by Bertrandi, that they have not been discovered until a post-mortem examination. But although constitutional disturbance, evidently referrible to an unfavourable state of the wound has, in all the cases which have come under my observation, preceded the formation of these visceral diseases, yet a favourable change has often taken place in the wound before the symptoms of the internal abscess have begun to

manifest themselves; and we are sometimes able to detect the existence of the latter by the presence of rigors and other symptoms of suppurative fever at a time when the wound itself is disposed to heal.

The examination after death of those who have been affected with this disease, presents appearances which are well worthy of notice, though it is not easy to convey a correct idea of them in words. The disease consists, apparently, of depositions in the cellular texture of the affected organ, partly of a white or yellowish coloured lymph, and partly of pus. These depositions vary in size from beyond the bulk of the largest walnut to something less than a common pea. Where the lymph is most abundant, they may be described as a soft white tubercle of irregular shape, not contained in a cyst, but imbedded in the cellular substance of the part, and gradually blending with its natural structure. When pressed, some pus exudes from them. Where the pus collects in greater quantity, it is lodged in an irregular cavity, probably in the middle of some of the tubercles, and the walls of the abscess are formed of flakes of lymph. The number of these tubercles and abscesses vary in different instances, there being sometimes only one or two, and sometimes the whole viscus being filled with them. In the lungs they are chiefly formed in the parts adjacent to the pleura pulmo-

nalis, and there is often at the same time an effusion into the cavity of that membrane of a seropurulent fluid mixed with lymph. In the liver and spleen they are dispersed throughout the substance, sometimes shewing themselves in one or more yellowish patches, not elevated, on the convex surface of the great lobe of the former viscus, and at other times lodged in its substance. The parts adjacent to them shew evident marks of increased vascularity. A portion of the liver and of the lungs, taken from a young man affected with the disease, are represented in plates IV. and V.; which, it is hoped, will give a correct idea of the morbid appearances.

I have said nothing of the treatment, and have little to suggest on that head. Our efforts must be directed, first, to subdue any excess of arterial action, and secondly, to quiet the disturbed state of the nervous system. When the abscesses are once formed, we shall find the truth of the observation of Desault, that they are almost invariably fatal.

I fear that I have prolonged this paper to much too great an extent, I shall therefore conclude by laying before the Society a short abstract of four cases of the disease, arising from injuries to different parts of the body.

CASE I.

Abscesses in the Lungs, with extravasation of lymph and pus into the cavities of the pleura, after wound and amputation of the arm.

A soldier of the Coldstream guards, received a musket-shot wound in the elbow-joint of his left arm, at the storming of St. Sebastian's, on the 31st of August, 1813. The ball fractured both the condyles of the os brachii, and the coronoid process of the ulna. He was attacked with a considerable degree of irritative fever a few days after, but the inflammatory symptoms in the arm did not run particularly high.

After rather more than three weeks, these febrile symptoms continuing, with copious discharge from the wound, and his general health and strength declining, it appeared to me necessary to amputate his arm, and I was in hopes that the disturbance of his system would subside, when the only exciting cause of it, which I could discover, was removed. This was done on the 24th of September. On the second morning after, he appeared cheerful, and the febrile symptoms had diminished; but towards the middle of that day, he was seized with a slight rigor, which lasted for ten minutes or a quarter of an hour, and was succeeded by a most profuse sweat. The rigor returned on the evening of the 27th, and during

that night, and through the whole of the 28th, the perspiration was constant. On the latter of these days, the stump was examined; union had taken place everywhere, except at the openings for the ligatures, and there was no tenderness in the part of the arm above it. He was ordered acid drinks, ripe fruit, and light nourishing diet. On the 29th, the same symptoms continued, with a dry shining tongue. All the ligatures came away, except that on the brachial artery. On the 30th, his breathing was found to be more hurried, but he took a full inspiration when desired, and it occasioned no pain. He had slept a good deal in the night, but his sleep was disturbed, and he moaned frequently. He still continued to perspire copiously. His bowels had from the first been perfectly regular. At this time the stump was flaccid, but union was going on. During that day the hurried breathing increased, and at four the next morning he expired; being the seventh day after the operation, and the thirty-first after he had received the wound.

I examined the body on the day he died. In the cavity of the thorax, on the left side, more than a pint of sero-purulent fluid was found effused, mixed with loose flakes of coagulable lymph. The pleura pulmonalis and pleura costalis were glued together in parts by the lymph, and were highly vascular. Numerous circumscribed abscesses were found imbedded in the cellular structure of the

lungs; principally in those parts of them which are nearest to the pleura. These abscesses were perfectly distinct from the parenchymatous substance of the lung, by which they were surrounded, and which appeared in no way affected, except by shewing higher vascularity. They did not appear to be invested by any cyst of condensed membrane; and in many of them, instead of pus, or mixed with pus, was a whitish substance, probably common lymph. On the right side of the thorax, the appearances were somewhat similar, but the effusion was to a much less extent. The viscera of the abdomen were healthy.

CASE II.

Abscesses in the Lungs, Liver, and Spleen, after compound fracture of the leg.

William Deane, 21 years of age, was admitted under my care, into St. George's Hospital, on the 23d of July, 1825, with a compound fracture of the tibia and fibula of his right leg, occasioned by a load of gravel having fallen upon him.

On the 27th considerable tumefaction had come on in the limb, inflammation having diffused itself through its cellular tissue, and a good deal of bloody serum had begun to ooze from the wound. This was followed by a sharp attack of erysipelas, which spread over all the thigh, and over the principal part of the integuments of the abdomen.

By free incisions wherever matter could be detected, venesection once or twice repeated in moderate quantity, and saline diaphoretics, these symptoms subsided favourably, but left him a good deal emaciated. On the evening of the 2d of August the erysipelas had disappeared; he had little fever, but profuse discharge, and he then began to take light nourishment with appetite.

On the morning of the 3d of August he was seized with a severe rigor, followed by sickness. His pulse at noon was 120; his tongue brown and dry; he had great heat of skin, and restlessness, and complained of a sense of uneasiness about the pit of his stomach. An aperient medicine was given him, and afterwards effervescing draughts, with small doses of antimonial wine.

On the 4th he was better, and his pulse had sunk to 108. There was a slight relapse of erysipelas over a part of the abdomen. The wound discharged profusely; but no matter was lodged, as there were free and depending openings.

On the 5th he was still better, his pulse was 96, and the erysipelas was again subsiding. Some wine was allowed him; and light nourishing but liquid food continued.

On the 6th his countenance was not so favourable. He was ordered sulphate of quinine. This

produced no good effect, his tongue gradually becoming more parched and dry.

On the 9th, he complained of an unpleasant sense of rising from his stomach, with an excessive heat in his throat, but he could bear pressure on the abdomen without pain. In the evening of that day he had an attack of stupor, and lay for many hours in a state of nearly complete insensibility, with contracted pupils. He died on the evening of the 11th, being the twentieth day from the date of the accident.

The body was examined on the following day. The vessels of the pia mater and brain were more turgid than natural, and there was a considerable effusion of serum into the ventricles. In the thorax, there were several circumscribed abscesses in the lungs on each side, but chiefly in those on the right. These were situated in the outer part of the lungs, towards the pleura, and varied in bulk, from that of a small pea to that of a large nut. Their contents were evidently a loose sort of lymph, through which pus was everywhere beginning to be diffused, as could be shewn by its issuing when they were gently pressed. On the upper part of the convex surface of the great lobe of the liver a large mass of a similar character was visible, of a perfectly white colour, appearing under the peritoneal covering. It was two or three inches in diameter, and when cut into, was found

to extend at least two inches in depth, into the substance of the liver, which everywhere bordering on it, had a natural appearance, and did not seem to be in any way condensed. A somewhat paler line marked where the two structures, that of the liver and of this mass, were blended. The mass consisted of loose lymph, with pus diffused through it, as in the lungs. On the right edge of the great lobe, under the short ribs, there was another mass of the same nature, but of a smaller size, and one or two similar patches under the capsule of the spleen. No attempt at union had taken place in the fracture.

CASE III.

Abscesses in the Lungs, Liver, and Articulation of Clavicle and Sternum, with effusion into the Thorax, after a bruise and wound of the foot, and a fractured fibula.

George Stacey, 18 years of age, and apparently of a healthy constitution, was admitted under my care into St. George's Hospital, on the 17th of July, 1827, in consequence of an accident from a cart-wheel having passed over the outside of his left foot. There was a small wound under the little toe, made apparently by some sharp substance, which had penetrated under the first phalanx, about an inch into the sole of his foot. Considerable ecchymosis had taken place over all

his instep and foot, and there was a simple fracture of his left fibula two inches above the ankle. Leeches, cold lotions, and aperient medicines were ordered, and the limb was kept quiet, and supported on a pillow. The leeches were repeated several times.

On the 23d he had shiverings, after a restless night; and these were followed by diffused cellular inflammation over every part of the foot, and by erysipelas extending up the leg and thigh, with enlarged glands in the groin. The integuments in different parts of the foot were divided, to set the inflamed parts at liberty; and on free openings being obtained for matter which had formed under the fascia plantaris, the febrile disturbance began to subside.

On the 4th of August he was reported convalescent, and at his earnest request was ordered some meat for his dinner on the following day.

On the 5th he had a severe rigor, which lasted for more than an hour. A purgative medicine was ordered, and he was again put on light diet; and it is to be observed that the rigor came on before he had taken the meat.

On the 7th, the rigor returned at the same hour as on the 5th, and lasted about the same time.

The limb continued perfectly quiet, all the wounds were healing, and no cause could be discerned for these febrile attacks. He had never had ague, but stated that where he had been working that disease prevailed. He was directed to take two grains of the sulphate of quinine every four hours.

The rigor returned again on the 8th, followed by much heat and a very quick pulse, and continued afterwards to recur at irregular intervals, being generally succeeded by profuse sweats.

On the 10th it was observed that he had slight ptosis of the upper eyelid of the right eye; his pulse was quick, nearly 150; his tongue dry; his countenance unfavourable, and with a yellowish tinge. There was no appearance of matter forming in any part of the leg, and he could bear pressure over the abdomen. In the evening some degree of emphysema and a little effusion of fluid were detected at the articulation of the right clavicle with the sternum. He had met with no accident in the part to account for this. On the evening of the 11th he died, being the 26th day after the accident.

The body was examined on the following day. In the head the arachnoid appeared more opake than natural, and there was some lymph effused

on the under surface of the anterior lobes of the cerebrum and round the junction of the optic nerves; matter was found effused into the cellular membrane over the sternal extremity of the right clavicle, and into the synovial cavities on each side of the inter-articular cartilage between that bone and the sternum.

The pleura on both sides of the thorax was very vascular, and distended with a considerable quantity of a sero-purulent fluid mixed with loose flakes of lymph. This was more abundant on the left than on the right side of the chest.

The lungs on each side contained numerous small abscesses and soft tubercular masses, principally adjoining the surface of the pleura. These varied in size from that of a hazel-nut to less than that of a small pea; and in the middle of some of the tubercles there was an irregular cavity filled with pus. One small abscess was found in the substance of the great lobe of the liver, at some distance from its surface. Drawings exhibiting the appearances in the lungs and liver of this man were made by an excellent artist for my friend Dr. Seymour, who has been so obliging as to favour me with them to lay before the Society; and engravings from them are annexed to this volume*.

* Vide Plates IV. and V.

CASE IV.

Abscesses of the Liver and Spleen, after fracture of the skull, &c.

A French gentleman, upwards of 30 years of age, was brought to St. George's Hospital, on the evening of the 27th of July, 1825, and admitted under the care of Mr. Keate. He was in a state of complete insensibility, in consequence of having fallen from his horse and pitched on the side of his head. He died on the 18th of August, the twenty-third day after the accident.

On examining the body, it was found that a fracture had taken place, commencing a little above the posterior and inferior angle of the left parietal bone, and extending across the occiput to the foramen magnum. There was a considerable quantity of blood extravasated at the base of the skull. The brain itself was ruptured at the lower part of the posterior lobe on the left side, and pus had formed at that part between it and the pia mater. Both the liver and spleen were studded over their surface, and throughout their substance, with soft tuberoular masses consisting of lymph mixed with pus, and with circumscribed abscesses of different sizes.

The following very interesting cases will further illustrate the subject. They are communicated by Mr. Lawrence, who has allowed them to be an-

nexed to this paper, a permission of which the Author of it is happy to avail himself.

CASES

Communicated by Wm. Lawrence, Esq. F.R.S. Surgeon to St. Bartholomew's Hospital, &c.

Thomas Scarborough, æt. 33, was admitted into St. Bartholomew's Hospital on the 6th of January, 1827, in order to have a loose cartilage removed from the knee-joint. He had laboured under an inguinal hernia for six or eight years, and had been subject, during that time, to bowel complaints. He had a somewhat sallow and unhealthy look, and a whitish tongue, yet considered himself in good health, and had followed his ordinary occupation as a labourer, to the time of his admission, having experienced only temporary inconvenience from the complaint in the knee, which had existed about three years.

After some attention had been paid to the state of his health, the operation was performed on the 13th of January, and a perfectly smooth white piece of cartilage, with a small bony nucleus, was taken out of the joint, having been previously fixed on the external condyle of the femur.

17th. The wound has united, without the slightest heat or swelling of the joint. In the evening however, without any assignable cause, bleeding took place from the wound, and ceased sponta-

neously by the formation of a coagulum, which distended the incision. On the next day the sallow appearance of the countenance, which had been noticed at the time of admission, was much more conspicuous, and the conjunctivæ were quite yellow. During the following week, the joint, which was kept quite quiet, remained free from pain and swelling, and a thin fluid escaped from the wound. There was no fever.

After passing a restless night, he became very ill on the 26th, with heat of skin, thirst, loss of appetite, costiveness, white tongue, with a dry brown streak in the middle. The joint was swoln and painful, the margins of the wound inflamed, and a purulent fluid mixed with synovia flowed from it on pressure. (Twenty leeches to the joint; aperient, and afterwards saline medicines.) He continued in nearly the same state till the evening of the 29th, when the febrile symptoms increased, and he was bled to fourteen ounces, the blood being strongly cupped and buffed. In consequence of continued febrile disturbance, twenty ounces of blood, exhibiting the same character as before, were taken from the arm on the 31st.

He was better on the 1st of February. Twenty leeches to the knee-joint, which continues inflamed and swoln, and discharges much pus.

During the night of the 2d he was restless and delirious. From this time he continued to sink:

paralysis of the right side, more particularly of the arm, was observed on the 5th; and he expired on the 7th.

Examination of the body twelve hours after death.

The knee-joint contained a small quantity of healthy pus: the synovial membrane was thickened, vascular, and in some places dark-coloured. An abscess on the outside of the knee, containing two ounces of pus, communicated with the joint; and the skin was separated from the subjacent textures, in the neighbourhood of the wound, by a cavity like that of an abscess. A small portion of the upper and anterior part of the tibia was denuded; the cartilages were unchanged in all other parts. Several small, yellowish, elevated spots were observed on the convex surface of the liver, which was slightly agglutinated to the diaphragm by recent adhesion. On cutting into them, a thin purulent fluid escaped, leaving a yellow fibrous substance, very much like the flakes of a scrofulous abscess. In some of them the fibrous substance predominated; in others, the thin yellow pus. These depositions varied in size, from that of a pea to that of a hazel-nut. They existed in great numbers throughout the whole liver, but the thick edge was more particularly loaded with them. I counted thirty on the surface of one section; there must consequently have been many hundreds throughout the liver. The other abdominal viscera were healthy. The arachnoid mem-

brane covering the hemispheres was partially elevated by serous effusion under it: this was particularly apparent over the posterior lobe. A small deposition of healthy yellow pus, about the size of a horse-bean, was found at the side of one of the posterior convolutions of the left hemisphere.

H. A. Porter, 51 years of age, a corpulent man, addicted to drinking, was admitted into St. Bartholomew's Hospital the 19th of January, 1827, for an old ulcer of the leg, with much surrounding inflammation. He had a poultice to the ulcer, and was placed on milk diet; he was twice bled in the arm, and took opening medicine. Under this treatment the leg improved rapidly, and he felt altogether much better; but three days after the second bleeding the wound of the vein became painful, and was found to be slightly inflamed. (A bread poultice was applied to it.)

Jan. 30th. Although the arm was easier after the application of the poultice, shivering fits came on last night, followed by heat and thirst; pulse 120. (Venesection to ten ounces: the flow of blood was arrested by syncope: the blood was not buffed. Twenty leeches to the arm. A dose of calomel and jalap. A saline draught every four hours, with antim. tart. gr. j. and potassæ nitr. 3ss.)

31st. Inflammation has extended to the axilla, the arm being red, swoln, and painful on pressure,

from the elbow to that part. (Thirty leeches to the arm, and a large blister afterwards.) A severe shivering fit was experienced this afternoon.

Feb. 1st. Restless night from the blister; pulse 102, and small; tongue white; no appetite; bowels open. The antimony had been gradually reduced to a quarter of a grain in each dose, but it still caused so much sickness that it has been left off.

4th. He has remained nearly in the same state, and has had several shivering fits. He complains to-day of severe pain in the left knee-joint, which is somewhat swoln. The arm is easy, and a small quantity of thin pus flows from the wound in the vein on pressure. The pulse hard, full, and 100; tongue white and dry; great thirst; bowels confined. (Senna mixture immediately; a saline draught every four hours, with tinct. digitalis ℥ xij.)

5th. He has passed a comfortable night. The left knee and thigh are greatly swoln and very painful. The joint is distended to the utmost with effused fluid, causing a large prominent tumefaction above and at the sides of the patella. All the superficial veins of the knee and thigh are excessively swoln, and form a very conspicuous net-work. The limb is slightly red, and preternaturally hot. Pulse 140, and soft; tongue white; bowels open. (Six doses of the digitalis have been

taken; let it be increased to m xv: four grains of calomel every four hours: ʒxvj. of blood to be taken from the knee by cupping.)

7th. He complained yesterday of pain in the right shoulder, which continues, without swelling or redness. The knee was relieved by the cupping, and is nearly free from pain, though the swelling is not much diminished. The arm is less painful; bowels very open. (The calomel to be left off; the digitalis continued.) In the evening he was more easy; the pulse small, hard, and 120; tongue brown and dry; great thirst.

He expired on the morning of the 8th, and the body was examined ten hours after death.

The cephalic vein, which had been punctured, was thickened, and contained pus for about two inches below, and four inches above the wound, where a coagulum of blood was found, filling the cavity. Above and below these points the vessel was healthy, and the other veins exhibited no morbid change. The abdominal and thoracic viscera were healthy. The arachnoid membrane was thickened, opake, and whitish. The cellular texture of the pia mater was loaded with serum, and an increased quantity of fluid was found in the ventricles. The cavity of the knee-joint was filled with a tolerably thick pus, of an uniformly reddish colour, as if from an intimate admixture of blood.

The synovial membrane was thickened, with an irregular and almost villous surface: it was extremely vascular in its whole extent. The cartilaginous coverings of the femur and tibia had undergone considerable absorption, so that the convexities of the femoral condyles and the corresponding excavations of the tibia were completely bare. The cellular substance covering the capsule of the knee, under the exterior muscles was inflamed, thickened, and loaded with pus. This texture was in the same state on the surface, and throughout the whole substance of the vasti and cruralis muscles. Sections of these muscles presented a most singular appearance, their large fasciculi being separated apparently by layers of thick yellow pus. The matter, although precisely similar in colour and consistence to that produced by phlegmonous inflammation, was nowhere collected into an abscess, but was diffused through the cellular structure, as serum is in the case of anasarca. In the rest of the limb there was effusion of a bright light-yellow serum. The cellular structure exterior to the orbicular ligament of the right shoulder was filled with thick yellow pus; but the cavity of the joint, and the deltoid muscle were natural.

Captain L., 34 years of age, became the subject of calculus in India, and returned home to undergo the operation. He had feverish symptoms of intermittent character after his return; and I prescribed for him the effervescing saline draughts,

under which the fever disappeared, and he also lost entirely the calculous symptoms. He was however still bent on undergoing the operation, which I performed for him, and removed a calculus of moderate size. It was necessary to bleed him largely from the arm on the evening of the third day. Soreness came on about the puncture in two days, and this was gradually followed by general swelling, and slight redness of the whole limb, with excessive pain and great feverishness. The local and general symptoms were not controlled by any of the measures adopted, and the case ended fatally at the end of the third week, symptoms of inflammation having come on on the same side of the chest as that on which he had been bled in the last forty-eight hours. The basilic vein was thickened by inflammation up to its termination, and the veins corresponding to it were in the same state down to the back of the hand. The coats of the vessels were red, and the surrounding tissue was indurated by inflammation. The interior of the inflamed veins was partially roughened, as if by the deposition of lymph: they contained pus throughout. The whole subcutaneous tissue of the arm was inflamed, and partially infiltrated with serum. The axillary vein and the continuation of the trunk to the heart were free from inflammation. The pleura was violently inflamed; the cavity contained about a pint of whey-like fluid, mixed with pus and flakes of lymph.

A married woman, 25 years of age, who had been a great spirit-drinker for some years, was bled in the left arm on account of an accident, and, pursuing her ordinary occupation, that of weaving, experienced a severe attack of inflammation in the vein and neighbouring part of the limb, for which she was received into St. Bartholomew's Hospital on the 2nd of December, 1826, being the fifth day from the commencement of the inflammation. She died on the fourteenth, her symptoms at one time having been so much relieved that we entertained great hopes of her recovery. On the 7th the inflammation and swelling of the left arm were much diminished, and there was copious discharge from the puncture of the vein of thin matter, sometimes yellow, sometimes reddish. She now suffered very greatly from pains over the body, but more particularly in the extremities. She passed a very restless night from this cause, and suffered greatly the next day from pain in the calves of the legs. On the 11th she again suffered much from pains in the limbs. On the 12th it was found that matter had formed under the skin of the right arm, without redness, and five ounces of good pus were discharged by a puncture. At the same time a painful swelling of the left knee, from effusion into the cavity, was observed. We were not allowed to examine this part after death.

AN ESSAY

ON

A PECULIAR INFLAMMATORY DISEASE

OF

THE EYE,

AND ON ITS MODE OF TREATMENT.

BY WILLIAM WALLACE, M.R.I.A. ETC.

Read 11th December, 1827.

THERE are few subjects in pathology which have obtained more attention than inflammation; and yet, perhaps, there are not any in greater need of further investigation. This is owing to the number and variety of the diseases which are classed under this head. It may indeed be said that every morbid affection, which has produced, or which has an immediate tendency to produce alteration of structure, and which is accompanied by an increased accumulation of the circulating fluids in the affected parts, is denominated inflammation. Various attempts have been made at a scientific classification of inflammatory diseases, but it will be admitted by those whose field for observation has been the most extensive, that the

number of facts as yet accumulated are insufficient for this purpose; and, in our present state of knowledge, he will contribute more to the advancement of the pathology of inflammation who will labour to describe with accuracy the individual forms of inflammatory diseases, and their proper mode of cure, than he who will engage in attempts at their generalization.

As inflammatory diseases are so numerous and so varied, it follows that they must require great diversity in their treatment. Yet there are certain general principles of management, which are applicable to them all, and it is only in the details, or in the application of these general principles to particular cases, that there exists much variety. It appears to be admitted that the capillary vessels hold an important rank in this class of diseases. That these vessels are, on many occasions in such diseases, in a morbidly distended state, there can be no doubt. There is also as little doubt but that the removal of this state of distention is one most important object in the treatment of inflammations. This is, in fact, so obviously true, that many practitioners appear to have no other aim in their treatment; and when such practitioners have exhausted those measures which are calculated to produce these effects, they have exhausted all their resources. Thus we observe many, who scarcely extend their therapeutics beyond the lancet, the leech, and the purge; and when these

have been employed in vain, the case is treated empirically, or is set down as hopeless; or it is left to the resources of nature, who often, on such occasions, performs the office of a skilful physician, and, when allowed to proceed without interruption, sets up processes of restoration which are quickly followed by recovery.

It is true, evacuants will be frequently sufficient for the cure of inflammatory diseases, and they are on many occasions the only remedies required. This is the case in those inflammatory diseases which occur in healthy constitutions in consequence of injury. On other occasions they will be sufficient, because the necessary actions of restoration can be accomplished by the natural resources of the part, after the vessels have been relieved from their preternatural load of fluids. The removal of the state of distention of the capillaries is, however, only one element in the treatment of inflammatory diseases, and often a very secondary element. For it is clear that there can be no accumulation of fluids in a part, unless those properties, or that state of the part, which regulated the admission of fluids into it shall have been previously altered. This alteration in the properties of the part often constitutes the most important change which has taken place, and consequently demands our particular attention. Therefore, to modify or alter the vital properties of the capillary vessels will be found to be the

great object, which we are to hold in view, in the treatment of many inflammations.

It must be admitted that, in our present state of knowledge, we are unable to trace any connection between the known qualities of our remedies, and the powers which they have of controlling diseased actions of parts, or of the general system. Thus, who can point out the manner in which mercury cures syphilis, or sulphur scabies, or bark ague? Yet, that there exists a certain connection between the mode of action of the remedy and the altered properties of the diseased parts, there can be no doubt; but our information on this subject must entirely result from experience. Those remedies that possess an action or influence, upon which we can calculate in the treatment of particular diseases, are called specifics, and are, it is to be regretted, very few in number. It is evident, that one great object of those who endeavour to extend the resources of medicine must be to increase our knowledge of such agents as exercise a specific influence over particular diseases; and we may hope that, as our knowledge advances, we shall be able to reduce to some general law of the economy all the insulated facts respecting the specific action of remedies. Such were the views which I entertained on the subject of inflammatory diseases, when the following case occurred to my observation.

Charitable Infirmary, Jervis Street,
October, 1827.

John Butterly, aged 36 years, a labourer, residing at No. 6, Dorset Street. He had been the subject of fever about eleven weeks ago. The attack lasted fourteen days, and was followed by a relapse, which confined him to his bed for a fortnight. Since then he remained well, until about a month ago, when he was seized by a violent rigor, followed by a hot and sweating stage. A similar paroxysm has returned with regularity, every second day since. His countenance is very pallid, and he is much disposed to profuse perspirations on the slightest exertion. The vision of his right eye is so very imperfect, that he can only distinguish light from darkness by it. The pupil is irregular and contracted. The iris greenish. There is considerable redness of the organ, particularly round the cornea, and on the inner side of the lids. The slightest exertion of the eye greatly increases the redness. He is troubled by frequent flashes of light, which dart across the sight; and often when in the dark, he conceives that he observes a lighted candle. There is not much pain of the eye, or of the parts about it.

This patient was subjected to the influence of bark, for the cure of the intermittent, under which he laboured. As the eye did not appear to attract much attention from him, no remedies were di-

rected particularly for it. It was, therefore, with surprise that I found an improvement in the state of this organ a few days after he had commenced the bark; and before this remedy was discontinued, the eye had regained its natural appearance, and the vision was greatly improved.

Upon considering this case, the resemblance of the ophthalmic disease, to a most obstinate and dangerous form of inflammation of the eye, which I had frequently observed among those who had laboured under fever, struck me with great force, and induced me to consider whether I might not find in cinchona a remedy for that disease of the eye. I therefore determined on employing it the first opportunity, and I was thus led to ascertain the specific powers of bark over this disease.

I shall now proceed to a description of the disease, and I shall follow this description by a concise recital of those cases, from which I have drawn up the history. When a patient presents himself, labouring under the disease, his aspect is peculiar, and when once seen, is afterwards easily recognized. To those who have witnessed the venereal iritis, it may be observed, that there are many points of resemblance, as well in the style of the countenance, as in the appearance of the diseased organ. There is often that haggard and worn aspect, that sickly, mottled, pallid hue of skin, that sleepy, exhausted, and oppressed ap-

pearance of the eye, which is much more easily observed than described. The patient only half opens the lids of the affected organ. They are of a purplish red colour, and tumid. Their subcutaneous vessels are preternaturally enlarged. The vascularity of the sclerotic and conjunctivă is greatly increased. The vessels of the former describe a reticulated zone round the cornea, and those of the latter run in a direction more or less straight to the edge of this membrane, and sometimes appear to pass on the edge. The hue of the redness is peculiar; it is a dark brick-red. The pupil is generally much contracted, and its edge thickened and irregular. The iris is altered in colour, generally greenish, and incapable of motion. There exists a suffused dimness of the cornea, which may be compared to the appearance glass assumes when it has been breathed upon. There is often a turbidness of the aqueous humour, and a pearly appearance of the parts behind the iris may be observed by looking through the pupil. There is great intolerance of light, and a copious, hot, lachrymal discharge. The vision will be found, for the most part, so extremely imperfect that the patient can merely distinguish light from darkness, and he is often tormented by flashes of light, which shoot across his eye, and these occur more particularly in dark places; or he is troubled by brilliant spectres, or by the constant presence of muscæ volitantes. There is very considerable pain, which returns in paroxysms, and these are almost

always more severe at night. The pain is sometimes referred to the ball of the eye, sometimes to one of the lids, sometimes to the temple or to the circumference of the orbit. It is, one while, compared to the action of a saw on the bones, and on other occasions, to the darting of a sword through the eyeball.

This disease occurs as frequently in the male as in the female. The youngest patient, of whose case I have a note, was 10 years of age, and the oldest 36 years. It seldom attacks both eyes, and the right eye suffers more frequently than the left. Of forty cases, which I have noted, there were only four who had the disease in the left eye, and only two who had it in both. The general health seldom appears to be much deranged. The tongue is for the most part slightly white. There is often considerable thirst, and the pulse is somewhat accelerated. The bowels are frequently confined, and there is occasionally a disposition to nausea. The disease has occurred more generally in those who have been the subjects of relapse, but the period at which it takes place after the first attack of fever is extremely uncertain. In some it has appeared immediately, and in others not for months. Sometimes a state of apparently full health has intervened between the attack of fever and the commencement of the inflammatory disease of the eye. On other occasions, the general health has seemed imperfect

from the time of the fever, until the occurrence of the ophthalmic affection.

This disease presents two very distinct stages. During the first stage there exist amaurotic symptoms alone; and in the second stage, to the amaurotic symptoms are superadded the symptoms of inflammation. The length of time that the amaurotic symptoms exist before the occurrence of external redness, or of the visible symptoms of inflammation, is extremely uncertain, as also the period after fever at which the amaurotic symptoms commence. On many occasions, the amaurotic symptoms, particularly a slight dimness of vision, with muscæ volitantes, have commenced at or even before the time of convalescence from fever, and yet the inflammatory stage has not supervened for weeks or even months; while on other occasions the dimness of vision has not commenced for several days, weeks, or even months after the febrile attack, and has then been immediately followed by the symptoms of inflammation. It is to be particularly observed that I have never seen a case in which, upon strict inquiry, amaurotic symptoms more or less strongly marked have not preceded the inflammatory symptoms. This is, in fact, one of the most remarkable characters of the disease. It is also to be noticed that a similar distinction of symptoms is observable during amendment, for it uniformly happens that the inflammatory symptoms

subside a longer or shorter time before amaurotic symptoms disappear, and often before they are diminished in severity.

It may be asked what is the nature of this disease; and what is the texture of the eye primarily affected? That it must be considered an inflammation, according to the common view of this morbid state, there can be no doubt. There is violent pain, there is preternatural redness, there is increased heat, and we may add increase of size. Nor does the morbid action stop at these primary symptoms. The structure of the organ becomes altered. The aqueous humour loses its transparency, interstitial depositions take place into the substance of the cornea. The colour of the iris is changed, the pupil is rendered small and irregular, depositions of lymph occasionally take place on the surface of the iris and at the edge of the pupil. In short, in progress of time, as will appear from the perusal of the cases, there is not a texture of the eye, the structure of which does not suffer materially. But, while the inflammatory nature of the disease cannot but be admitted, it is not so easy to determine what the texture is, which has been primarily affected. Judging from the course of the symptoms, it is the retina which first suffers; but judging from the disease when advanced, it should be called iritis. Does the disease commence in the choroid membrane, and from this extend to both retina and iris, producing

in the latter the symptoms already described, and a paralysis of the former? This is, perhaps, the more correct view of the subject, and best suited to an explanation of all the phenomena. If this be the case, the disease may be denominated choroiditis.

This disease bears no resemblance to that affection of the eye which has been described by Mr. Wardrop by the name of rheumatic ophthalmia*. Indeed there is no disease with which it is at all likely to be confounded except the venereal iritis, and the resemblance to it is often so very striking that the one cannot be distinguished from the other, without particular attention to the history of the case and to the concomitant symptoms. So long as the disease is in its primary stage, or in the simple amaurotic state, without any visible symptoms of inflammation, it may be confounded, if attention be not paid to the history, with incipient amaurosis proceeding from other causes.

Although the influence of bark over some rheumatic diseases, which are certainly more or less inflammatory in their nature, is already known, I am sure its utility in the affection under consideration will appear most remarkable, and much at variance with the routine practice of the pre-

* See Medico-Chirurgical Transactions, Vol. X.

sent day. Indeed had not a fortunate contingency enabled me to make that observation, which led to the discovery of its influence, it is not very likely that any reasoning on the subject would have induced me to employ in a disease so decidedly inflammatory, a remedy so decidedly tonic. Yet now that the observation has been made, the practice does not appear to be irreconcileable to the most enlightened views we possess of the state of the capillary vessels in inflammation. I mean those views which consider that these vessels are in a state of debility. But, if the vessels be in a state of debility in inflammations in general, why should not a remedy calculated to restore tone be generally useful in these inflammations? Can the utility of bark on some occasions and not in others, when the symptoms are apparently the same in the organ affected, be accounted for by the consideration that the general system of the patient is also in a state of different tone, and consequently in need of the administration of tonic remedies. It must be admitted that this is not unlikely when we reflect on the probable state of the body after fever. Yet the disease has occurred, as may be observed from reading some of the following cases, in persons who appeared at the time to possess full health, and the bark was equally successful in these. In considering this part of the subject it should be remembered that there are several symptoms of the disease which appear to shew a state of considerable debility in

the vessels affected. Thus the redness of the eye is, as has been noticed, very deep in its hue. It is, as well as the pain of the organ, much increased by a depending position of the head or by the most trifling employment of the eye, &c.

It is remarkable that the amaurotic symptoms frequently continue for a considerable period after all redness and pain have been removed by the employment of the bark. Indeed, I have seen some patients whose vision had not been perceptibly ameliorated, when the eye had, to all appearance, except the existence of a contracted pupil, recovered a healthy state. Now this is the more remarkable as it might, a priori, be expected that the bark would be suited to the removal of the amaurotic more than to that of the inflammatory symptoms.

Before the efficacy of bark over this disease was ascertained, it had been uniformly treated, like the iritis from the venereal disease, by depletion and mercury; and with what ill consequences, on many occasions, I have had full opportunities of observing. The reader will find, among the cases, examples which will illustrate this mode of treatment as adopted by others. Those cases of this disease which are related by Mr. Hewson of this city in his treatise on the venereal ophthalmia have been all cured by mercury; but I am decidedly of opinion that there must exist some

source of error in his account, for the incurability of the disease by mercury, on many occasions, has been ascertained by several as well as by myself, as also its curability by bark, when the mercurial treatment had failed.

When I commenced the use of bark in this disease, I did not venture to employ it when the inflammatory symptoms were very severe, without preceding its administration by bleeding and purging. But, latterly, whenever a case has presented itself, I have prescribed the bark alone, or simply with such medicines as were suited to the regulation of the bowels; and with the most decidedly good effects. Indeed, I have thought that the abstraction of blood has, on some occasions, considerably retarded the cure; yet cases may occur in which bleeding and purging will be necessary.

I trust the reader will be of opinion, after a perusal of the following cases, that the remedy has a specific influence over the disease. The knowledge of this important fact has been already productive of much benefit in this city, and to what extent it may influence our views of some other inflammatory diseases remains for future investigation. It is only a few years since the power of mercury over another inflammatory disease of the eye was ascertained; and the value of that discovery, not only in relation to the treatment of the peculiar

affection of the eye, for which it was employed, but also in relation to many other forms of inflammatory diseases, has been since duly appreciated by the profession*.

The cases which I shall now relate in illustration of the foregoing observations may be classed thus:—1st, Those for which mercury had been employed in vain; 2dly, Those for which this remedy had not been used. In the latter class will be included, 1st, Those cases which were not submitted to treatment until the inflammatory stage had commenced; and, 2dly, Those which were treated during their amaurotic stage.

1. *CASES*

In which mercury had been employed in vain.

Catherine Brennan, æt. 24, admitted into the Charitable Infirmary, January 10, 1827. Increased vascularity of the conjunctival and sclerotic tunics of the right eye, particularly round the cornea. The iris is of a darker colour than that of the left eye. The pupil is contracted, irregular, and mo-

* "The ascertainment and promulgation of this fact (the beneficial use of mercury in iritis) are due to the Infirmary of this metropolis (London) for diseases of the eye, and in the catalogue of modern contributions to medical science, except the practice of vaccination, I know of none entitled to rank before it." See Surgical Essays, by Astley Cooper and Benjamin Travers, Part I., p. 85. London, 1818.

tionless. The cornea is dull, and, as it were, contracted in diameter. There is a pearly appearance of the humours at the bottom of the eye. The lids are tumid and red. Their veins are large, and when she looks at any object, she does not separate them more than about two lines. There is much lachrymal discharge produced by every attempt to examine the eye or to look at any object. Pulse 100, and firm; tongue white.

She reports that her vision is very imperfect, that there is considerable pain and heat of the organ, particularly at night, that her bowels are confined, that there is much thirst, and that she has little appetite for solid food; that it is fourteen days since her eye became inflamed, and that the inflammation had been preceded for some time by imperfect vision.

She has been a patient at the Meath Street Dispensary. Bleeding, purging, blisters, and mercurials, to the extent of producing a very sore mouth, were employed without any relief. She had fever about six months ago, since which she has had two relapses, which succeeded each other very rapidly. Since the last relapse, which occurred two months ago, she has remained in a delicate state of health. (Half a drachm of bark to be taken three times a day in a cup of new milk, and a laxative pill each night.)

January 12th. She complains of sickness of stomach. The vascularity and pain of the eye are diminished. Bowels free.

℞ Sulphatis Quininæ gr. xij.
Aquæ Fontanæ ℥iij.
Acid. Sulphur. dil. gtt. iv.
M. cochleare magnum ter quotidie.

13th. She complains of pain and oppression in the region of the stomach. Tongue very white. Pulse 120. She reports that she had a shivering fit yesterday morning, and a copious perspiration last night. Her bowels are rather confined. Her eye is much improved. She was directed to take immediately a draught of the infusion of senna with sulphate of magnesia, and after its operation to continue the sulphate of quinine.

15th. She complains of general soreness and weariness. Tongue very white. Pulse upwards of 120. There is great thirst. The eye appears nearly well. The quinine to be omitted, and the following mixture to be employed.

℞ Aquæ Ammoniæ acetatæ,
Aquæ Fontanæ, āā ℥iij.
Vini Tartritis Antim. ℥ij.
Syrupi ℥i.
M. cochleare magnum 2dâ quâque horâ.

16th. Bowels confined; other symptoms as yesterday. (To have the infusion of senna with the sulphate of magnesia, and after its operation, the mixture, as directed yesterday, to be repeated.)

18th. Tongue cleaning; pulse 95. Mixture as yesterday.

21st. Tongue clean; pulse 88; vision imperfect, but the eye almost free from pain and morbid vascularity. (The quinine mixture to be repeated.)

27th. Discharged. The vision slightly impaired, but the eye to all appearance in a state of perfect health.

I had an opportunity of seeing this woman some weeks after she had been discharged from the hospital, and her vision was then perfect.

Joseph Bunn, aged 16 years, admitted an outpatient of the Charitable Infirmary, January 20, 1827. There is great increase of vascularity of the right eye, particularly round the cornea. The iris is of a greenish colour. The pupil is contracted, irregular, and motionless. There is intolerance of light, and vision is very imperfect. He reports that he had fever in August last, followed in a fortnight after by relapse. During both the primary attack and relapse he had been a patient in the Meath Hospital. About a month after his

discharge from the hospital, the right eye was attacked by inflammation; but, from the period at which he was discharged from the hospital, the vision of the right eye had been imperfect. He has been bled, his mouth made sore by mercurials, and a variety of washes have been employed for the affection of the eye, but without any relief. In two days, half a drachm of bark, four times a day, produced the most decided effects. On the third day, the eye was nearly free from all pain and redness, and in a week he was in every respect well.

James Cullen, aged 17, admitted an extern patient of the Charitable Infirmary, on the 19th of March, 1827. Increased vascularity of the right eye, and particularly of the sclerotic tunic round the cornea. The iris of the inflamed eye is darker in colour than that of the sound eye. There is a pearly appearance of the humours of the right eye. His vision with the inflamed eye is very imperfect, and when he attempts to look at an object, he moves the eye as if to cause the image of the object to fall on a sensible part of the retina. He has occasional pain in the forehead, particularly at night. It is four weeks since the eye had been attacked by inflammation, which from his account had been very violent at first. The redness had been preceded some days by dimness of vision. He attributes the occurrence of the disease to his having come out of the house after dark without his hat, for, on the following morning, he observed

the dimness of vision, and this was followed in a few days by redness and pain. He has been bled and blistered, and has used mercury to the extent of producing a very sore mouth, without relief. He has been a patient at Stephen's Hospital. He had fever seven months ago. The primary attack was followed by two relapses. Half a drachm of bark four times a day restored his eye to health in the course of one week.

For the following case I am indebted to Mr. M. Collis, Surgeon to the Meath Hospital, who employed the bark at my suggestion.

January 21st, 1827. Mary Davis, æt. 27, married, had fever ten weeks ago, was three weeks in bed. Her right eye became inflamed immediately afterwards. Present appearances:—conjunctiva very red; a deep-seated pain in the eye; pain over the eye-brow and in the head; vision so completely impaired that she can only distinguish day from night; pupil slightly irregular at the inner angle; colour of iris not altered; tongue white; pulse regular; appetite good. Has been using mercurials, purgatives, topical bleeding, and fomentations for the last ten days without effect. (To have a purgative bolus immediately, and after this has operated to take the following mixture:

℞ Sulphatis Quininæ ℈j.
Acid. Sulphur. dil. gtt. xx.
Aquæ ℥viij.
Sumat cochlearia ampla duo quartis horis.)

23d. Has taken the above mixture since last report. The pain and inflammation have considerably abated, The tongue is clean.

Feb. 1st. Since the above date till this day she has continued the sulphate of quinine, and some purgative pills occasionally. She also used a collyrium of sulphate of copper in water. The external inflammation has entirely subsided; no pain whatever in the head or eye. She remains, however, with considerable dulness of vision, which is gradually wearing away.

For the notes of the following case, I am indebted to Mr. Purcel, who was at that time resident pupil at the Charitable Infirmary, and to whose zeal and acquirements I have great pleasure in bearing testimony.

Mary Baker, aged 18 years, of a strong and full habit, applied on the 7th of December, 1826, at the Charitable Infirmary. She complained of violent pain of the right eye, darting through the eye-brow, and shooting back towards the occiput, with great intolerance of light. On endeavouring

to separate the eyelids, the lachrymal discharge, which she described as being hot and scalding, poured over the cheek. The conjunctiva was of a bright scarlet colour, and the redness so diffused that it was impossible to distinguish the vessels. The cornea was cloudy, and the pupil contracted and irregular. Vision was almost lost, and there was great constitutional disturbance. She stated that she had laboured under fever two months before, and that there had been a suppression of her menstrual discharge since that period; that she had been attacked by the ophthalmia two nights ago as she was going to bed; that she had imagined that some sand or dirt had got into her eyelids, and that during the night she was unable to rest from the violence of the pain.

As she appeared of a plethoric habit, twenty ounces of blood were taken from her temporal artery. Tepid fomentations were ordered, and two grains of calomel were directed to be taken every second hour. She had been purged previous to her application.

On the following day, the pain was somewhat relieved, but the appearance of the eye was the same as the day before. The lids were more swoln. The calomel and tepid fomentations were directed to be continued, and a dozen leeches were applied to the eyelids.

On the 9th, the vascularity of the eye was diminished, and the intolerance of light was not so great; but the pupil continued irregular and contracted, and the vision as before. Her gums being now sore, the calomel was omitted.

She did not return to the hospital for three days, and she then stated, that her absence had been occasioned by the soreness of her mouth. She was now comparatively free from pain. She could open her eye much better, and the vascularity of the conjunctiva was so far diminished, that the vessels of the sclerotic coat, could be distinguished forming an areola round the cornea. The cornea was less cloudy. The pupil was still irregular, contracted, and motionless. The soreness of her mouth having diminished, she was directed to take two grains of calomel every sixth hour.

She returned to the hospital in two days. Her mouth was very sore, but there was no improvement in the eye. A blister was ordered to the nape of the neck, and some purgative powders were directed.

She did not return for three days. The vascularity was then diminished, but far from being removed. Neither the vision nor the state of the pupil were in the slightest degree improved. The belladonna had been applied without effect. I

now despaired of being of any more service to her, when Mr. Wallace coming into the surgery, I shewed her to him. He immediately put her on bark, under which her recovery was so rapid, that she was perfectly well at the end of a fortnight.

The following case was sent to me, March 15th, 1827, by Mr. Ryal, who was then surgeon to the National Institution for Diseases of the Eye, and who is now chief surgeon to the naval hospital at Chatham, as an example of iritis, for the cure of which, mercury had been employed in vain, and for an experimentum crucis respecting the influence of bark in such cases.

Thomas Farquar, aged 27, a boot-closer, residing in Charles Street. The vision of the right eye is so very imperfect, that by it he can merely distinguish light from darkness. When he looks at a burning candle, it appears like a star or blazing fire. When in the dark, he is much troubled by frequent gleams of light, which dash across the diseased eye like flashes of lightning. Day-light is not so intolerable as candle-light. When he stoops his head, or attempts to work, he experiences a most severe pain in his forehead and eye-brow; a pain like a head-ach, but confined to one side. He has sometimes a distressing sensation, as if the vessels about the head would burst. The eyelids are tumid and livid, and their veins are large and tortuous. They adhere slightly at night.

When he attempts to look at any object, he only half opens his eye. The vascularity of the organ is greatly increased, particularly round the cornea, and the vessels appear to advance on the edge of this membrane. The iris of the sound eye is of a light blue colour, but that of the diseased eye is green. The pupil is contracted, irregular, and motionless. The humours are turbid. There is occasionally a copious and hot lachrymal discharge, which is always followed by relief. Tongue white. Pulse 80. He complains of thirst, yet says his appetite is good.

It is ten weeks since the vision of the right eye became impaired, but the organ has not been perceptibly inflamed longer than about six weeks. He had fever about five months ago; the first attack was, a few days after convalescence, followed by a relapse. Venesection, blistering, and mercury have been employed for the ophthalmia, without relief. He was under the influence of mercury for four weeks, and at the end of this period he was worse than when he began its employment. He was directed to take one tea-spoonful of bark three times a day.

March 17th. He reports that the pain is less, and that the vision is slightly impaired. The bark to be continued, and a laxative pill to be taken each night.

20th. He complains of great pain of the eye, attended by a very copious lachrymal discharge. He reports that he had been much better until yesterday, and he attributes the aggravation of the symptoms to his having taken some porter, and to exposure to cold when at chapel. The bark to be continued.

21st. Pain less, but vision not improved.

29th. In consequence of the illness and death of one of his children, he has not been able to attend to himself for some days. The pupil is more contracted than it was. The vision is completely gone. He does not observe those flashes of light which formerly troubled him, nor has he so much pain in his head. (The bark to be repeated. Belladonna applied.)

31st. The eye appears less red. The pain is less. The pupil is equally irregular and contracted as it was. He complains of a troublesome itching of the eye, and of a return of those flashes of light which formerly tormented him. Brilliant spectres also frequently appear before the eye. (The bark and belladonna to be repeated.)

April 2nd. The pupil has been slightly dilated by the belladonna: it is of an oval form. The long axis of the oval is oblique from above downwards, and from without inwards. The pain and

redness are greatly diminished. (The bark to be repeated.)

9th. The pain is gone, and there is scarcely any redness. There is some vision.

14th. The organ does not differ in appearance from the other eye, with this exception, that the pupil is motionless, somewhat contracted, and irregular. The vision is very much improved. (The bark to be continued for a few days.)

A few weeks ago I saw this patient. The pupil remained irregular and motionless, but the vision was scarcely less perfect than in the other eye. The organ was, however, easily fatigued.

The following case had been under the care of Mr. Rooney at the Dublin Eye Infirmary, and was sent by him to me, March 12, 1827, after mercury and depletion had been carefully employed in vain for its cure.

Ann Ward, aged 22, unmarried, residing No. 12, Coal Quay. The vision of her right eye is almost lost: by it she can merely distinguish light from darkness, or faintly observe an opake body if interposed between her eye and the window. She complains of great pain in the eyeball and in the head over and round the orbit. The pain occurs at intervals in the course of the day,

but is most severe at night. Day-light causes some uneasiness, but the light of a candle produces great distress. When she attempts to look at the light there is a great lachrymal discharge, and she only half opens the eye. The lids are tumid and livid. The anterior chamber seems shrunk or diminished in size. The cornea is dull, and at its lower border there is an appearance as if pus or lymph were deposited between its laminæ. The iris is of a deeper colour than that of the opposite eye. The pupil is greatly contracted, and motionless: its lower border, which is turned backwards, adheres by a thin layer of semi-transparent lymph to the capsule of the lens. The vascularity of the conjunctiva is much increased, and there is a zone of deep-seated vessels in the sclerotic round the cornea. Her tongue is white; pulse 100; countenance pallid; her appetite is very deficient; she rests badly at night; bowels in general confined. She had fever about eight months ago, followed soon after by a relapse. The vision of the right eye has been imperfect since the time of the fever, but the organ was not painful or red until a few weeks ago. The pain and redness occurred after exposure to cold. (A tea-spoonful of bark was directed to be taken three times a day, and a laxative pill each night.)

March 19th. The redness of the eye is almost gone, but the vision is but little improved. There is still some pain in the ball of the eye, and

in the cranium over it. The tumidity of the lids is diminished, and the colour of the iris is restored. The flashes of light continue, but the intolerance of light is much diminished. The pupil remains contracted and irregular.

26th. The organ has assumed its natural appearance, with this exception, that the pupil is irregular, contracted, and scarcely moveable. Vision improved. She was directed to continue the bark for a few days longer.

I have been informed by Mr. Rooney, who has lately seen this patient, that her vision is restored, but that the pupil remains contracted and irregular. It is however but fair to state, that after the patient had ceased to use the bark, and after all perceptible inflammation had been removed, Mr. Rooney employed mercury again, to which he attributes the perfect restoration of vision. But, from my observation of many similar cases, I am authorized to conclude that this result would have occurred without the employment of mercury.

It is needless to add to the length of this paper by multiplying examples in proof of the efficacy of bark after mercury had failed, for the cure of this disease. I have notes of many more cases, but a further detail is unnecessary. In passing, it may be remarked that I have been informed by several who have used the bark at my suggestion, and

among others, by Dr. Colles, one of the professors of surgery to the College of Surgeons, that its power was most decided in several cases, in which they had employed it after mercury had failed.

2. *CASES*

In the primary or amaurotic stage.

Ellen Hopkins, aged 30, unmarried, applied at the Charitable Infirmary, March 12th, 1827. Complains of dimness of vision of both eyes, but particularly of the right. The pupils of both eyes are slightly irregular. There is no increased redness of the eyes, but there is some tumefaction of the lids, which adhere together at night. There is a pearly appearance of the humours behind the pupil, particularly in the right eye. There is a severe pain in the lower edge of the right orbit, as if she had received a blow on that part, and there is considerable pain of the same eye when the organ is gently pressed. The eyes are more painful in the mornings and evenings than in the middle of the day. Occasional flashes of light dart across the right eye. It is two months since the eyes have become affected. She had fever in last October: was ill for six weeks. There were six in the same house who had fever also. This woman attended the others. She has been in a delicate state of health ever since. She was di-

rected to take one drachm of bark three times a day, and a laxative pill occasionally.

March 20th. She has continued the bark regularly to the present date, and it may be said that the eyes are now in a perfectly healthy state. She was, however, directed to continue the bark a few days longer.

Under this head I shall content myself with the mention of two other cases, of which I have received a brief note from Dr. Reid, president of the association of the College of Physicians, and physician to the Fever Hospital, Kevin Street, to whom I had communicated the knowledge of the influence of bark over the disease.

Catherine Bungy, admitted into ward No. 11 of the Kevin Street Fever and Dysentery Hospital on the 12th of February, 1827, affected with cerebral fever, was convalescent on the 22d. On the 26th complained of dimness of sight, pain in the orbits, pupil of the right eye irregular in shape, so as to appear oval. No external inflammation. (Ordered one drachm of bark and four grains of capsicum in three parts; one to be taken three times a day.)

March 2d. Sight restored; pupils have a natural appearance.

3d. Discharged cured.

Hugh Byrne had relapse of fever six days after convalescence, admitted into ward No. 2 on the 28th of February, and was convalescent on the 3d of March.

6th. Complains of dimness of sight, pain in the orbits, pupil of right eye irregularly contracted, no external appearance of inflammation. Ordered the bark powders.

9th. Sight nearly restored.

11th. Relapse of fever. The powders were therefore stopped, and the treatment adapted to fever employed. On the cessation of the fever, the bark was again administered, and the affection of the eye removed.

3. *CASES*

In the secondary or inflammatory stage.

Matthew Casey, aged 20, applied at the Charitable Infirmary, as an extern patient, March 16th, 1827. The lids of the right eye are tumid and red. They are only about half opened when he attempts to look at any object. The vessels of the lid are dilated. The vascularity of the conjunc-

tival and sclerotic tunics is greatly increased. The iris is green. The pupil is irregular, and its edge thickened. There is some pain in the head, and considerable pain on gently pressing the eye-ball. The vision is greatly impaired. Occasional flashes of light cross before the eye. A dimness of sight preceded the redness for two days. The eye has been inflamed three days. Had fever last December, for which he was confined in the fever hospital at the House of Industry. He has been bled and purged. (To take half a drachm of bark three times a day.)

March 22d. There is less pain, less redness, and less intolerance of light. (The bark to be continued.)

26th. There is little pain or redness. The sight is improved. The iris continues green and the pupil irregular. (The bark to be continued.)

30th. The iris has recovered its colour. The vision is much improved. There is no intolerance of light. His vision is best in the evening. Muscæ volitantes, which troubled him, have disappeared. (The bark to be repeated.)

April 6th. Eye perfectly restored.

John Farquar, brother to Thomas Farquar, whose case has been above related, applied at the

Charitable Infirmary, March 19th, 1827. His right eye has been inflamed about five days. The inflammation was preceded several days by impaired vision. The lids are tumid and red, and do not expose much of the eye. The enlarged vessels, which exist principally round the cornea, and which appear to pass on its edge, are of a bright red colour. The pupil is susceptible of some motion. The iris is greenish, while that of the sound eye is of a grayish blue colour. Tongue slightly white. He had been the subject of fever four months ago; the primary attack was followed by a relapse. (Half a drachm of bark was directed to be taken three times a-day, and a purging pill every night.)

March 21st. The inflammation of the eye does not appear diminished, nor is his vision improved. He reports that the pain is less. (The bark to be repeated.)

26th. The redness is diminished, but the vision is not improved. The pain is much less. (The bark to be continued.)

30th. The improvement continues. (The bark to be repeated.)

April 2d. The redness is very much diminished. There is no pain. Vision not much improved.

The pupil is irregular. (The bark to be continued.)

5th. The pupil is oval transversely. It is not so much dilated as that of the sound eye. There is no pain whatever. The redness is nearly gone. The sight is improving.

9th. The eye is apparently well. The vision is much improved. (To continue the bark for a few days.)

July 10th. I have seen this boy to-day. He applied at the Infirmary on account of a pruriginous eruption. His eye is perfectly well in all respects.

I am indebted to Mr. Purcel for a note of the following case:

Rose Car, a robust looking girl, aged 17, applied at the Charitable Infirmary on the 12th of February, 1827, labouring under acute ophthalmia. She stated that she had been confined in Cook Street Hospital with fever, and that she had left it only a fortnight ago. She complained of violent pain shooting through the orbit, and of great intolerance of light. Whenever she endeavoured to open the eye, the lachrymal discharge was very copious. The pupil was contracted and irregular.

The vessels of the sclerotic coat were remarkably turgid, and formed a zone round the cornea. Vision was very imperfect. I directed her to take four grains of calomel immediately, and in a few hours after, some infusion of senna with the sulphate of magnesia.

14th. Medicines had operated well. Appearances were much the same as yesterday. A small tea-spoonful of bark was directed to be taken three times a-day in a cup of milk. Under this treatment she continued to improve daily, and on the 22d of February was free from all complaint.

Ellen Fowan, aged 30, applied at the Charitable Infirmary, March 29th, 1827. There is extreme intolerance of light of the left eye, particularly during the latter part of the day. She is unable to open the lids by any voluntary exertion. They are tumid and reddish, and adhere together at night. The eye is extremely red, particularly round the cornea. There is great lachrymal discharge. The iris is green, and the pupil greatly contracted. There is a stinging pain in the ball of the eye, and a violent pain in her forehead, which she compares to that which would be produced by the darting of a sword. The pain is most severe at night. The slightest pressure on the ball of the eye is painful. She complains of a sense of weakness, of thirst, and of an unpleasant taste in her mouth. Her bowels are regular. Dimness of vision, accompanied by

muscæ volitantes, preceded the redness about two weeks. She had fever last December. She has been bled and purged by Mr. Ryal at the National Institution for Diseases of the Eye, but these remedies rendered her worse. (To take a tea-spoonful of bark three times a-day.)

March 31st. She continues to complain much of the pain and of thirst. The eye, however, does not appear so red, and she can open it better. Her bowels are confined. A purgative draught was ordered, and directions given to go on with the bark on the following day.

April 2d. Pain not so severe. She opens the eye better. The redness is less. (To go on with the bark.)

She employed the bark regularly until the 10th, when she was discharged perfectly well.

It is altogether unnecessary to add to the number of cases; I shall therefore conclude with the following extract from a note, which I received some time ago from Dr. Lendric, physician to Mercers' Hospital. "I have treated two cases lately of ophthalmia with the usual characters of iritis consequent on fever, by means of the sulphate of quinine. I do not recollect the particulars of each case further than that the amendment was rapid, and speedily followed by recovery."

EXPLANATION OF THE PLATES.

PLATE I.

Fig. 1. Shews the appearances of the stomach in the second case of Tumour in the Abdomen related by Dr. Seymour.

A. The œsophagus.

B. The duodenum.

C C C. The coats of the stomach much thickened, from which arises a fungoid tumour occupying the whole of the pyloric half of that viscus.

Fig. 2. A small portion of the left lobe of the liver, containing a tubercle, in its first or crude state.

PLATE II.

The appearance of the stomach in the third case described in Dr. Seymour's paper on Tumours in the Abdomen.

A A A. The smaller curvature of the stomach.

B B B. The greater curvature.

C. The duodenum.

D. The pylorus.

E E. Divided portions of the fungoid tumour exterior to the coats of the stomach.

F. The fungoid tumour which is ulcerated in its interior part, forming a cavity which opens into the stomach.

PLATE III.

Represents the tubercles in the liver in the same case. These are in a very advanced stage of developement, and are the same as those described by French writers under the name "Encephaloïdes."

PLATE IV.

Shews the morbid appearances in the lungs of George Stacey, whose Case is related in Mr. Rose's Paper on Depositions of Pus, &c.

A A A. The pleura much inflamed.

B B B. Depositions in different parts of the lung, some of which have begun to ulcerate.

PLATE V.

Shews a portion of the large lobe of the liver taken from the same patient. In the substance of which is an abscess similar in character to the former, which was filled with good pus. The rest of the viscus was healthy.

END OF VOL. XIV.—PART I.

G. Woodfall, Printer, Angel Court, Skinner Street, London.

MEDICO-CHIRURGICAL TRANSACTIONS.

VOL. XIV.—PART II.

The PRESIDENT and COUNCIL of the MEDICAL and CHIRURGICAL SOCIETY have thought it expedient, from the press of valuable matter, to publish the FIRST and SECOND PARTS of the FOURTEENTH VOLUME of the TRANSACTIONS of the SOCIETY at the end of the present Session, instead of separately in March and October, as originally intended.

MAY, 1828.

CONTENTS

OF

VOL. XIV.—PART II.

Page

VII. Pathological and Surgical Observations relating to Injuries of the Brain, by B. C. Brodie, F.R.S., and Surgeon to St. George's Hospital.—Part I. 325

VIII. Analysis of a specimen of Cutaneous Perspiration, by J. Bostock, M.D., F.R.S., &c. With an account of the Case, by Richard Bright, M.D., Physician to Guy's Hospital 424

IX. Of the Catarrhus Æstivus, or Summer Catarrh, by J. Bostock, M.D. F.R.S. &c. 437

X. Case of Rupture of the Stomach produced by Vomiting, with some Observations, by J. N. Weekes, Esq., Member of the Royal College of Surgeons, and House-Surgeon at St. Bartholomew's Hospital 447

List of Donations 454

Index 461

IOLOGICAL AND SURGICAL

OBSERVATIONS

RELATING TO

IES OF THE BRAIN;

B. C. BRODIE, F.R.S.

ND SURGEON TO ST. GEORGE'S HOSPITAL.

PART I.

February, 11th and 25th March, 1828.

SECT. 1.

tention in the following pages to lay Society some observations relating to the brain, and the treatment which es require. If any apology be necessary undertaking, I may remark, that led to it by the great importance of , and also by this consideration, that, uch information may lie, as it were, roughout the mass of surgical literactical writer, as far as I know, has atmake such a collection and arrangets as will enable the surgical student listinct and connected view of all the curious and interesting inquiry. The er contains only a part of the observ-

ations which I have to offer, namely, those which relate to the first or immediate consequences of the injury. Should these be favourably received, I shall venture, on a future occasion, to communicate to the Society a second series of observations relating to those more remote consequences which are connected with inflammation of the brain and its membranes, or which arise after inflammation has subsided.

Sect. 2.—*Immediate Effects of Injuries of the Head as indicated by Dissection.*

In treating of injuries of the brain, of course I mean to include the consideration, not only of those by which the brain is affected in a direct, but also of those by which it is affected in an indirect, manner. Wounds and contusions of the external parts of the head demand our attention, inasmuch as they may be, and not unfrequently are, followed by disease of the more important parts contained within. Among the effects produced we are to distinguish those which are the immediate result of the injury, and those which are to be attributed to inflammation and its consequences. In the former we are still further to distinguish the actual derangement or destruction of the natural organization, such as it is disclosed by dissection, and the symptoms produced during the life of the patient by the disturbance of the functions of the injured organ; attempting at the

same time to view these two orders of facts in connection with each other, as the method by which, on this as well as on other occasions, we may be the best enabled to found the practical art of surgery on the basis of a scientific pathology.

The appearances which are observable on dissection in a person, who dies soon after an injury of the head, are very various, and may be variously complicated; but they admit of being classed under the following heads:

1. There may be simple contusion of the scalp with extravasation of blood between it and the tendon of the occipito-frontalis muscle, or between the latter and the pericranium, or between the pericranium and the bone; concerning which it is scarcely necessary to repeat the observation of Mr. Pott as to the close resemblance of the impression which is given to the fingers by the margin of the mass of extravasated blood, and that of depressed bone.

2. The scalp may be lacerated so as to expose the surface of the pericranium, or the pericranium itself may be torn off with it so as to expose the surface of the bone. Of these injuries, however slight may be the apparent difference between them, the latter is, as I shall shew hereafter, likely to produce much more serious consequences than the former.

3. If a blow be inflicted on the head of the dead subject, the small vessels which connect the dura mater to the inside of the bone, at the part where the blow is inflicted, become ruptured; and in consequence the dura mater is separated from the bone to a greater or less extent. This, which happens in the dead body, may happen in the living body also, and is not an unfrequent consequence of an injury of the head. The separation of the dura mater is sometimes very extensive. A boy twelve years of age, fell from a height of fifty feet, and struck his forehead against the ground. He was admitted into St. George's Hospital in a state of stupor, in which he lay for three days, when he died. On dissection, besides a large extravasation of blood on the inferior surface of the brain, the dura mater was found to have lost its adhesion to the bone everywhere, except in the basis of the cranium, and the external surface of that membrane had a brown and sloughy appearance.

4. The cranium may be fractured in all varieties of ways, from the most simple fissure to the most complicated fracture accompanied with depression and extending in a number of directions. A fracture in most instances takes place in the upper part of the cranium. Fractures of the basis are always the consequence of very severe contusion, and recoveries from these accidents are comparatively rare, not because a fracture of the basis is in

itself more dangerous than a fracture elsewhere, but because it is almost invariably complicated with extensive injury of other and more important parts.

A fracture generally occurs in that part of the cranium on which the blow has been inflicted. But we find that in cases of fracture of other bones, the fracture is often situated at some distance from the part which is immediately exposed to the shock of the injury, as when the fibula is broken a little above the outer ankle in consequence of the foot having been twisted outwards, or the ribs are broken in the side in consequence of a blow on the sternum; and some French writers have supposed that fractures of the cranium occur in the same manner, being produced by what they have denominated the *contre-coup*.

It has been observed to me, however, by Mr. Earle, that he has not known a fracture of this kind to take place except where the blow seems to have operated in such a manner as to impel the occiput forcibly against the atlas, the line of fracture passing through the former bone, where it rests on the latter. My own experience corresponds very nearly with that of Mr. Earle. The only well marked cases of fracture of the cranium, in which the fracture could be attributed to the effects of the *contre-coup*, which have fallen under my own observation, were similar to those which

he has mentioned. I do not, however, mean to assert, that such fractures absolutely never occur independent of the re-action of the atlas. Among the cases recorded in the Prize Memoirs of the French Academy of Surgery there are some which shew that the thing does happen *, and Mr. Bell has offered an ingenious and scientific explanation of the mode in which it happens. It is, however, worthy of remark, that the only two cases which Mr. Bell has adduced in illustration of what he has advanced, are those in which the fracture extended across the occiput, in one case passing through, and in the other case passing close to, the foramen magnum of that bone.

In all cases of fracture of the cranium, with depression of bone, it is of importance to observe that the division of the inner does not correspond to that of the outer table of the skull, the former being always broken to a greater extent than the latter. In consequence of this the actual depres-

* For example, M. Saucerote quotes from *Joan. Bonhius de Renunt. Vulnerum* the following history. A man died after having received a blow above the right eyebrow. On dissection it was ascertained that there was no fracture in the part which had been struck, but in the right orbit there was a fracture half an inch in length, extending towards the *Sella Turcica* of the sphenoid bone. But with respect to many other cases which are mentioned in the same memoir, it may be said that there is no sufficient evidence that the fracture which was attributed to the counter-stroke, did not really arise from a second blow on another part of the head.

sion is greater than it would appear to be from the mere inspection of the external fracture.

I have seen a case in which there was a fracture with distinct depression of the inner table, while there was a simple fissure which was scarcely perceptible, and that without the smallest depression, of the outer table. But more remarkable instances of the kind are recorded by authors. M. Saucerote*, in the Prize Memoirs of the French Academy, quotes a case from Tulpius, in which there were extensive fissures of the inner table of the skull, although the outer table remained uninjured; and another from Parey, in which, while the outer table was entire, the inner table was broken into splinters, some of which were actually driven into the substance of the brain. Dr. Hennen also in his Treatise on Military Surgery†, gives an account of a case similar to the last, in which the inner table was splintered, and at one part driven more than half an inch into the membranes of the brain, although there was not even a fissure of the outer table. The greater elasticity of the outer table of the skull, and the greater brittleness of the inner table seem to afford the only reasonable solution of these phænomena.

5. In young children we sometimes find the

* Vol. IV. 8vo edition, 1819, p. 322.

† P. 323, second edition.

cranium depressed or indented after a blow on the head, and in the course of a few days restored to its natural level without the aid of a surgeon. I suppose that in these cases the earthy part of the bone has given way, while the animal part has remained entire, so that there has not been a complete fracture or actual solution of continuity, and that the pulsations of the brain constantly operating against the inner surface of the bone have been the means of elevating the depression. I have had no opportunity of verifying or contradicting this opinion by dissection, but it corresponds to what we know to happen in cases of injury done to other bones during the period of childhood.

6. The disjunction of the sutures is much more rare than fractures of the cranium. It is evident that this cannot happen except in those who are not much advanced in life, and in whom the sutures are not completely consolidated. Such a case is always to be regarded as one of peculiar danger, not so much because the disjunction of the sutures is in itself likely to lead to bad consequences, but because the force necessary to produce it is so great, that it is also likely to produce extensive and serious injury of other parts.

7. Extravasations of blood within the cranium, in consequence of a blow on the head, occur in various situations: 1st, between the bone and

dura mater, and here the extravasation may arise from a rupture of the small blood-vessels by which the dura mater is connected to the bone, or from a laceration of the trunk or branches of the middle meningeal artery. There is however never any considerable hæmorrhage from the former source. At least, all the experience which I have had on the subject tends to confirm the opinion advanced long ago by Mr. Abernethy, that blood is never poured out in such quantity as to produce a dangerous pressure on the brain, except where the middle meningeal artery has been lacerated, and from this vessel the hæmorrhage is sometimes very copious. I do not recollect to have seen it lacerated, except in combination with fracture running across the bony canal in which it is lodged; cases are however recorded by authors, in which the artery has been opened into, and bleeding has taken place from it, independently of fracture*. 2dly, there may be extravasations of blood within the dura mater, and here the blood is generally collected between the dura mater and the tunica arachnoides. Sometimes however, but rarely, the blood occupies the ventricles; at other times we find it extravasated in the substance of the brain, or in the cells of the cellular texture by which the tunica arachnoides and pia mater are connected with each other. Large extravasations are sometimes found on the upper surface

* Two such cases are quoted by Mr. Abernethy, one from Mr. Hill, and the other from Mr. Latta.

of the brain, but more frequently on its basis. In the latter situation, the hæmorrhage is usually the consequence of a rupture of the substance of the brain. As a blow on the abdomen may lacerate the substance of the liver or spleen, and occasion hæmorrhage into the peritonæal cavity, so may a blow on the head cause a rupture of the tender substance of the cerebrum or cerebellum, and hæmorrhage into the cavity of the dura mater. These cases generally afford examples of the *contre-coup*. The rupture of the brain rarely takes place at the exact spot at which the blow is inflicted; and the great irregularities which exist on the inner surface of the basis of the cranium, sufficiently explain wherefore the inferior is more liable to be ruptured than the superior surface of the brain.

Wounds of the sinuses sometimes bleed profusely where there is a free opening in the bone made by accident or operation, through which the blood can readily escape. But a very slight pressure is adequate to the suppression of this as well as of other venous hæmorrhage; and I have never known an instance in which there was such a collection of blood as was capable of interfering with the functions of the brain, between the dura mater and the bone, or between the dura mater and the brain, in consequence of a wounded sinus. There is often a considerable effusion of blood from the ear, especially in cases of fracture of the basis of the cranium. This may, as far as I know, sometimes

arise from other sources; but it seems probable that it must, in most instances, arise from the laceration of the lateral sinus, where it extends downwards behind the petrous process of the temporal bone and the external meatus; and in one instance I ascertained it to have been so by the examination of the body after death. In another case which fell under my observation, there was hæmorrhage from both the ear and the nostrils. The patient, a boy, died shortly after the accident; and it was found on dissection that there was a fracture of the base of the cranium, with laceration of the cavernous sinus, and that the hæmorrhage had taken place from this sinus.

7. There may be all descriptions of wounds of the brain and its membranes, punctured, incised, and lacerated, with or without loss of substance: and with these, the effects of contusion which have been already enumerated, may be variously combined.

Sect. 3.—*Concussion of the Brain.*

It is evident that many of those consequences of an injury of the head which are disclosed to us by dissection, are not likely to be marked by any peculiar symptoms in the living person, at least not previous to the access of inflammation. Wounds and lacerations of the brain,

and compression of the brain, whether it arise from extravasated blood or a depression of bone, may impair or destroy the functions of that organ; but neither simple fissures of the cranium, nor disjunction of the sutures, nor separation of the pericranium or dura mater, are in themselves adequate to produce such effects in the first instance, although they may lay the foundation of serious disease afterwards.

But it has been long since established by the investigations of surgeons, that another cause, besides those which are rendered manifest by dissection, may be concerned in producing the symptoms which immediately follow a contusion of the head. A man receives a blow on the head; he becomes insensible, and continues so for a few minutes or for several hours. He dies, in consequence of this or some other injury; and on examination after death, the brain and its coverings appear to be perfect in all their parts; so that the most accurate anatomist can discover nothing different from the natural appearance of these organs. Opportunities of verifying this observation occur more or less to all those who have had much experience in their profession. In such cases, the patient is said to have been stunned, or to have suffered from concussion of the brain: and it is to one of these three causes, namely, concussion, compression, and wounds of the brain,

that the symptoms which immediately follow an injury of the head, and which are antecedent to those produced by inflammation, are to be referred.

Opportunities of inspecting the brain, where the patient has laboured under symptoms of concussion, may arise, 1st, where the concussion has so disturbed the functions of that organ as to have been in itself a cause of death (which is, on the whole, a rare occurrence). 2dly, where the concussion of the brain has been complicated with other and still more serious mischief. We learn from such examinations, that the symptoms which are ascribed to concussion do not depend on any such derangement of the organization as admits of being disclosed to us by dissection. The brain appears to retain its natural structure unimpaired. We are not however justified in the conclusion that there is therefore in reality no organic injury. It is difficult to conceive in what other manner concussion of the brain can operate so as to produce the effects which it is known to produce; and if we consider that the ultimate structure of the brain is on so minute a scale that our senses are incapable of detecting it, it is evident that there may be changes and alterations of structure, which our senses are incapable of detecting also. The speedy subsiding of the symptoms of concussion does not contradict this opinion. A deep incised wound in other parts of the body may, under certain circumstances, be completely

and firmly united in the space of twenty-four hours; and it is easy to suppose that the effects of a much slighter injury may be repaired in a still shorter space of time.

The disturbance of the functions of the brain, which is the consequence of concussion may exist in various degrees and may be of various duration.

In many instances there is at first complete insensibility to external impressions. The patient lies as if in a state of apoplexy, from which however he recovers in the course of a few minutes. In some instances the recovery is complete; the patient rises and walks away as if nothing unusual had occurred. In other cases this state of total insensibility is followed by one in which the sensibility is impaired, but not destroyed. The patient is not affected by ordinary impressions, but if spoken to in a loud tone of voice, he will shift his position, and answer in a peevish manner. Sometimes he is in a state of imperfect delirium, talking in an incoherent and rambling manner, as if intoxicated. The pupils contract on exposure to light, and are sometimes more contracted than under ordinary circumstances. There is no paralysis. The respiration in the great majority of cases is performed easily and naturally; in a few instances only it is laboured, and approaching to being stertorous. These symptoms

may wholly subside in the course of a few hours or they may continue for three or four days. In the latter case it frequently occurs that the patient regains his sensibility for a time, and then relapses into his former condition. Where inflammation of the brain follows the injury done by concussion, it may be that the primary effects of the concussion are entirely relieved, so that there is a considerable interval of sense before the inflammation shews itself. But it may be also that there is no such interval, and the symptoms of concussion, in this last case, are gradually and imperceptibly converted into those of inflammation.

Concussion of the brain in almost every instance occasions head-ach; sometimes a slight head-ach, which is speedily relieved; at other times an intense head-ach, which may remain for some days, a solitary symptom, after all other symptoms are vanished. Sickness and vomiting for the most part are early symptoms, and seldom continue after the patient has recovered from the first shock of the accident. Of course there is no recollection afterwards of what occurred during the period of complete insensibility. The memory however is sometimes affected to a still greater extent; and the impressions made on the mind by the events immediately antecedent to the injury become obliterated. A groom in the employment of the Persian ambassador, in the summer of 1819,

was engaged in cleaning one of the ambassador's horses, when he received a kick from the animal on the head. He did not fall, nor was he actually insensible or stunned; but he entirely forgot in what employment he had been engaged at the time of receiving the blow. Being unable to account for the time which had elapsed, he concluded that he had been asleep: said so to his fellow-servants, observing at the same time that "he must set to work to clean the horse, which he ought to have done before instead of going to sleep." A boy going down into the hold of a ship fell from a considerable height, and struck his head. He lay insensible, as it appeared from the observation of his shipmates, about half an hour, when he came upon deck without any assistance. Nevertheless on the following day all the circumstances of the accident had passed from his memory. Some time afterwards when he was received into St. George's Hospital, I found that he knew nothing of the accident except from the report of others. He had not only entirely forgotten the accident itself, but he did not even remember his having gone down into the hold of the vessel before the accident, nor his having come upon deck afterwards: and he never regained his recollection on these points. Desault mentions the case of a man, who, after a blow on the head, at first had no recollection except of recent events: but afterwards a change took place, in consequence of

which his memory failed him as to recent events, while he could remember those which had occurred in childhood.

A number of circumstances which it is unnecessary to enumerate, as every physiologist is well acquainted with them, tend to shew that the influence of the brain is by no means necessary to the action of the heart: which may, under certain circumstances, continue uninterrupted, even after the entire removal of the head. Nevertheless, in cases of concussion of the brain, we generally find the circulation more or less affected; the pulse intermitting, irregular, feeble, perhaps scarcely perceptible, and the patient in a state approaching to that of syncope; and such may be his condition for a few minutes, or for the first four or five hours after the infliction of the injury. The connexion and sympathy which exist between the different parts of the nervous system, afford a reasonable explanation of this apparent anomaly, which, however remarkable it may be, is not more remarkable than the syncope which not unfrequently follows the first introduction of a bougie into the urethra, or that which is the consequence of many other trifling injuries of parts remote from the centre of the circulation, and exercising no direct influence over the functions of the heart.

In those cases in which concussion proves fatal it appears to be this disturbance of the heart's ac-

tion which is the immediate cause of death. In general when the patient has lain for some time in the state which has been described, a reaction of the circulating system takes place, and the pulse beats with greater strength in proportion as the failure of it was greater in the first instance. But where the shock has been unusually severe there is no such reaction. The pulse becomes more and more feeble, more irregular and intermittent; the extremities grow cold, and at last the action of the heart being altogether suspended, the patient expires. In some cases, even after reaction has begun to take place, it seems as if the constitution was unequal to the effort: there is another failure of the circulation, the result of which is the same as if the patient had never rallied from the beginning.

Sect. 4.—*Compression of the Brain.*

If the dimensions of the cavity of the cranium be suddenly diminished, as in a case of fracture with depression of bone, or if the actual quantity of the contents of the cranium be increased, as in a case of ruptured vessel and extravasation of blood, the functions of the brain become impaired. This is a matter of experience and observation, about which there is no dispute. There may be, however, some difference of opinion as to the physiological explanation of the phænomena which arise in such cases. It has

been usually held that the substance of the brain is actually compressed; but Mr. Bell observes very truly that we have no more right to believe that the substance of the brain admits of being compressed, than that water is compressible; and he infers, that what is called compression of the brain, operates not on the substance of the brain itself, but simply on its blood-vessels; lessening their diameter, and thus preventing that due supply of scarlet arterial blood which is necessary to a due performance of the vital functions. It is evident indeed that the effect which compression of the brain produces on its vessels must be to a greater or less extent such as Mr. Bell has described it to be. It may, however, be urged on the other hand, first, that in some cases symptoms similar to those which arise from compression, take place where there is a preternatural determination of blood to the head; where the vessels instead of being empty are actually overloaded; and that in these cases the symptoms are relieved by drawing blood from the jugular vein, or from the veins of the arm; as if the pressure occasioned by too much blood in the vessels was productive of nearly the same effects on the brain, with that arising from blood in a state of extravasation: secondly, that, although we admit the substance of the brain to be incapable of being compressed into a smaller compass, yet that the effect of all pressure on it must be, and is, to alter the position

and relative situation of the delicate fibres of which its minute structure is composed, and that we need seek no further explanation of the symptoms which are met with in these cases.

In whatever way compression of the brain operates so as to disturb the functions of that organ, it is difficult to explain wherefore the symptoms to which it gives rise are sometimes slight, and at other times urgent, although occurring under circumstances apparently similar. A depression of bone, which in one instance produces comparatively little effect, in another case occasions a manifest destruction of sensibility: and the same observation may be made respecting internal extravasations of blood. Every practical surgeon must have observed that there are differences in the symptoms produced, which are not to be accounted for by any difference in the quantity of pressure, nor in the particular part of the brain which is affected by it. At the same time it is undoubtedly true, that, for the most part, the patient suffers more from an extensive than from a slight depression; more from a large than from a small extravasation. There is reason to believe that pressure is on the whole more dangerous when it affects the lower part of the brain, than when it affects the upper part; and it has appeared to me that more urgent symptoms are produced by a given quantity of blood, when it is effused

into the cells between the tunica arachnoides and pia mater, than when it is collected in one mass so as to produce a less general pressure.

Having made these preliminary observations, I shall proceed to consider the particular symptoms which arise from pressure on the brain.

1. *Pain in the head:*—The blow which occasions a fracture and depression of the cranium, or an extravasation of blood within the cranium, is likely to produce concussion of the brain also, and as pain in the head is a symptom of the latter injury, it may be a question, in many instances, to which of these two causes it is to be attributed. That intense pain in the head may, however, be wholly dependent on pressure on the brain is proved by a case in which a patient under my care laboured under this symptom, and no other, except indeed that the pupil of one eye was preternaturally dilated. There was a fracture with depression of a very small portion of one parietal bone, and immediately on the depression being elevated, the pain in the head was completely relieved.

2. *Insensibility:*—which is sometimes incomplete, corresponding to what is observed in cases of concussion of the brain; the patient lying for the most part unconscious of what passes around him, but capable of being roused by stronger impressions on his senses; while at other times the

loss of sense is perfect, so that the skin may be pinched, the flame of a candle may be held close to the eye, and the loudest voice may be uttered in the ear, without any evident effect being produced on the sensorium. Where the cause of these symptoms is a fracture and depression of bone, they shew themselves immediately after the infliction of the injury; but where they depend on an extravasation of blood, as, in many instances, the extravasation may take place slowly, so an interval of time, an hour for example, may elapse before the patient becomes insensible. Not unfrequently there is insensibility, from concussion of the brain in the first instance; then the patient recovers, and afterwards, as the blood is gradually effused within the cranium, he relapses into his former state of insensibility. These observations were made first by Le Dran, and afterwards by Mr. Pott, and it is needless to remark how great is their importance, as connected with the diagnosis of these different kinds of injury. But even when pressure on the brain is actually established, the insensibility to which it gives rise is liable to some degree of variation. At one time it may be perfect; then the patient may shew some signs of consciousness, and then relapse into a state of perfect stupor. It may be observed, that there is especially an increase of sensibility after blood-letting, and that as the effect, which the loss of blood has produced on the circulation, subsides, so the sensibility becomes again diminished.

If these observations be correct, it is evident that there is not any such difference in the character of the insensibility produced by concussion, and that produced by compression of the brain, as will enable us at once, and in all cases, to distinguish these two kinds of injury from each other. Those who are led to take a different view of the subject, may indeed urge, that in some cases there is considerable pressure on the brain, without any symptoms at all; and that when, in a case of fracture, and depression of the cranium, or extravasation of blood within the cranium, the patient lies with a partial loss of sense, this is to be attributed not to the actual pressure, but to the concussion of the brain, which the violence inflicted must necessarily have occasioned in a greater or less degree. I might however refer to several cases, to which this explanation cannot be well applied; but a single example will be sufficient. A woman received a blow on the head; after which she was able to walk home, complaining that her head was hurt, and that she had received her death blow. In an hour after the accident, she gradually became insensible. About fourteen hours afterwards she was brought to St. George's Hospital, labouring under symptoms precisely corresponding to those which have been described by Mr. Abernethy, as arising from concussion. These symptoms continued, and even rather abated than increased, until the third day, when an aggravation of them took place, and she expired. On ex-

amining the body, eight ounces of blood were found effused underneath the dura mater. The circumstance of there having been no loss of sense in the first instance, and the interval of an hour which elapsed between the period of the accident and that of the occurrence of the symptoms, sufficiently demonstrate that they were the consequence of pressure produced by the hæmorrhage, and not of the concussion.

It sometimes happens, that there is a destruction of sensibility in one part of the system, while the general sensibility is impaired only in a slight degree. An old man was admitted into St. George's Hospital, who had been run over by a cart. There was a fracture with depression of one parietal bone. He was sensible, but slow in giving answers, and peevish, and it was observed that he was totally blind. Mr. Gunning removed a portion of the parietal bone with the trephine, and elevated the depression; but the operation produced no change in the symptoms. About thirty-six hours after the accident, the pulse became frequent, and he was delirious. He remained entirely deprived of the faculty of vision; believing that he saw imaginary objects, but totally unconscious of the existence of those which were actually before his eyes. At the expiration of the fifth day he died. On examining the body, the membranes of the brain were found to be inflamed, and smeared with pus and lymph. In the basis of the cranium, there

was a transverse fracture extending across the sphenoidal bone, and the fractured edges were displaced in such a manner as to press on the optic nerves immediately behind the orbits, and to explain, in the most satisfactory way, the total loss of sight. Such cases as that which follows, are not very uncommon. A gentleman was thrown from his horse, and received a blow on the head. He lay with well-marked symptoms of compression of the brain, which however began to subside in a few days. In a short time, his general sensibility was completely restored, but there was a numbness, or loss of sensation, of one hand for more than a year afterwards.

3. *Paralysis*:—Here, as on other occasions, the same cause which prevents the brain receiving impressions from the nerves, prevents it also transmitting its influence through the nerves to the muscles. Where the destruction of sensibility is complete, the voluntary muscles are completely paralysed. In whatever position the patient may be placed, in that he remains motionless. The bladder incapable of contraction, becomes preternaturally distended with urine; and the relaxation of the sphincter ani allows the involuntary discharge of fæces from the rectum. Afterwards the muscles of respiration become affected also; the patient breathes with stertor, as in a most profound sleep; and the diaphragm contracts at longer and longer intervals, until respiration altogether ceases.

It is this paralysis of the muscles of respiration, which in ordinary cases of pressure on the brain is the immediate cause of death. Where there is an imperfect loss of sense, there are often no marks of paralysis whatever. At other times there is paralysis of one side of the body, while the muscles of the other side, continue to obey the will as usual; and sometimes the paralysis is permanent. Dr. Hennen* gives an account of a patient who recovered with life from the effects of a fracture and depression of the left parietal, and left side of the frontal bone; but fourteen years afterwards, he was still paralytic in the opposite arm and leg.

Hemiplegia is however a much more rare occurrence where pressure on the brain is the consequence of accidental violence, than it is in cases of apoplexy from a spontaneous rupture of a blood-vessel. The difference may reasonably be attributed to the different situation of the pressure. In cases of apoplexy, the extravasation is for the most part situated either in one of the ventricles, or in the substance of the brain; but after a blow on the head, the cause of pressure more commonly operates on the surface. Occasionally the paralysis is confined to one set of muscles, or even to a single muscle. There may be, for example, loss of motion in one hand, or a *ptosis*, or dropping

* Military Surgery, p. 304.

down of one upper eyelid. In cases of hemiplegia after an injury of the head, the paralysis is on the side opposite to that on which the pressure exists: at least I have never met with an exception to this general rule. The observation, however, does not apply to more partial paralytic affections. A young gentleman fell from a coach-box, and struck the left side of his head against the wheel of the carriage: he was not stunned, but there was an ecchymosis of the left cheek and temple, a copious discharge of blood from the left ear, and the muscles of the left side of the face were rendered paralytic. When he laughed, the mouth was distorted to the right side; and he was unable to close the left eyelids. The loss of power over the muscles was not attended with any loss of sensation, and was not permanent, the recovery of the patient being complete in about three months. It seems reasonable to conclude that in this case the cause of the paralysis was pressure produced by the extravasation of blood on the portio dura of the nerve of the seventh pair, by which the muscles of the face are supplied, and not on the brain itself. In like manner I have known a ptosis of the *left* upper eyelid connected with pressure on the inferior surface of the *left* hemisphere of the cerebrum, the pressure being so situated as to affect the nerve of the third pair immediately behind the left cavernous sinus.

4. *Convulsive actions of the muscles:* — Where

there is paralysis of one side of the body after an injury of the head, we sometimes observe convulsive twitches of those of the other side. But it appears to me to admit of a question whether this symptom ought to be regarded as the consequence of simple pressure on the brain. We find it occur in cases of punctured and wounded brain, where there is no pressure; and it so happens, where it has fallen under my observation in cases of depression of bone or extravasated blood, and where the exact nature of the injury was afterwards ascertained, that the pressure has been always found to be complicated with wound or laceration of the substance of the brain.

The convulsive twitches to which I here allude are slight and only partial, and are to be distinguished from those violent fits of general convulsions on which I shall have to offer some observations hereafter.

5. *Affections of the pupils:*—The state of the pupils varies very much in cases of pressure on the brain even under circumstances apparently similar. I have seen the pupils dilate with the absence, and contract with the presence of light, although the patient lay in a state of complete insensibility, and did not seem to be at all conscious of the impressions made on the retina. But this is a rare occurrence, and for the most part where the other symptoms of pressure are present,

the pupils are insensible and motionless; being generally dilated, but sometimes contracted. It is not uncommon for the pupils to remain for a time in a state of dilatation, then to become suddenly contracted, and after remaining so for a longer or shorter time, to become again dilated, these changes taking place independently of light and darkness. I have observed especially, where the pupils have been dilated, that they have frequently become contracted immediately after the abstraction of blood; the dilatation returning as soon as the immediate effect of the blood-letting on the circulation has ceased. Dr. Hennen mentions a case in which blood was extravasated among the membranes of the brain, and in which the pupils were observed sometimes to become dilated with an increase, and to contract with a diminution of light. In a patient in St. George's Hospital, in whom there was an extravasation of blood on the upper part of the right hemisphere of the cerebrum, and no cause of pressure elsewhere, both pupils were insensible and motionless; but the right pupil was in a state of dilatation, and the left in a state of contraction. In another patient, in whom there was fracture and depression of the left parietal bone, the left pupil was permanently dilated, the right pupil being in a natural state. In a third case, in which there was a fracture and depression of the frontal bone above the right superciliary ridge, there was a dilatation of the pupil of the left eye; and again, in a fourth ca e

was a fracture and depression in the same situation as in the case last mentioned, and no cause of pressure elsewhere, both pupils were dilated and equally insensible, but immediately regained their sensibility and power of contraction on the depression being elevated.

As there may be general insensibility without the pupils being insensible to light, so there may be insensibility of one of the pupils without general insensibility, and even without loss of vision. A gentleman fell from his horse, received a severe contusion of the head, and was taken home, labouring under manifest symptoms of pressure on the brain. When, after the lapse of several days, these symptoms became somewhat abated, it was observed that the pupil of the right eye was dilated, and incapable of contraction; but his power of vision was unaffected. This symptom was accompanied with a ptosis of the right upper eyelid, and a numbness of the right hand. I believe that nearly a year elapsed before the pupil was restored to its natural condition.

6. *Affection of the Circulation:*—If concussion of the brain be capable of disturbing the action of the heart, it is not remarkable that the greater injury arising from pressure should produce its effect on the circulation also. The effect however is not constant; and sometimes even where the other symptoms of pressure exist, there is no alteration

of the pulse. Mr. Abernethy has observed that intermission of the pulse is a less frequent occurrence in cases of compression than in those of concussion of the brain. However that may be, I believe it will be found that pressure on the brain for the most part affects the action of the heart; not by producing actual interruption, but by causing its contractions to be either less frequent, or less forcible than natural. The influence of pressure on the brain on the circulation is sometimes very manifest in cases of depression of the bone of the cranium, where the depression is relieved by an operation. A child, three years of age, was admitted into St. George's Hospital having an extensive fracture of one parietal bone, extending into the adjoining portions of the temporal and occipital bones. Towards the posterior part of the parietal bone there was a considerable depression, with laceration of the membranes of the brain and of the brain itself. I assisted Mr. Gunning in an operation in which he removed a portion of the bone with a saw, and elevated the depression. Previously to the operation the pulse at the wrist was barely perceptible, but immediately afterwards it became distinct, and beat with considerable strength. A gentleman who held the child's hand during the operation observed the pulse to be suddenly restored at the very instant of the depression being elevated. Another patient (a man) was admitted into the hospital having a fracture with depression of the right

side of the frontal bone extending into the right parietal. The pulse beat no more than forty times in a minute, but immediately on the depressed bone being elevated it rose to sixty in a minute.

7. *Sickness and vomiting*:—These symptoms occur in some cases of pressure on the brain from injury, but it may nevertheless admit of a question whether they should or should not be referred to the actual pressure. The same injury which occasions a fracture and depression of the cranium, or an extravasation of blood within the cranium, is likely to produce concussion of the brain also. In cases where the symptoms of pressure are the most distinct, and there is complete insensibility, there is no disposition to vomit; and where I have had occasion to apply the trephine on account of a fracture and depression, and there was no sickness previously, I have sometimes known the patient to become sick and vomit immediately on the depression being elevated.

The symptoms of pressure on the brain vary in different cases, not merely as they may exist in different degrees, but as they happen to be variously combined with each other. We find also that there is a great difference as to the period of their duration. Of two individuals, in whom the

early symptoms appear to be equally urgent, one may die in the course of three or four hours, and another may survive for several days; and among those who recover, we may find some in whom the symptoms wholly subside in the course of a few days, and others in whom some remains of them exist after the lapse of several months, or even of years. Even in fatal cases the symptoms are not in every instance uniformly progressive, and it is not very unusual for them in some degree to subside, recurring afterwards with increased severity.

Where blood-vessels have been ruptured or wounded in other situations, secondary hæmorrhage occurs in some instances at the end of a few days from the period of the injury having been inflicted. Does secondary hæmorrhage ever occur within the cavity of the cranium? In one case, which came under my observation, I was led to believe that this actually happened, causing sudden death after three or four days of apparent convalescence. As I have met with no other instance of the kind, I conclude that such occurrence is very rare; but probably it would be more frequent, if it were not that in the practice of modern surgery a very strict antiphlogistic regimen is usually pursued for a considerable time after the occurrence of the accident. The following is a brief outline of the case to which I allude.

A man, thirty-five years of age, on the afternoon of the 8th of November, fell from a cart and struck his head against the pavement. A medical practitioner in the neighbourhood bled him, and he was afterwards brought to St. George's Hospital talking and reeling like a drunken man. He was again bled. On the following day he complained of head-ach, but was otherwise well. He continued without any symptoms until five in the morning of the 12th of November, when some of the patients in the same ward heard him talking incoherently. The nurse called the house surgeon to him, but before he could arrive the man had become insensible, and was found lying motionless with stertorous respiration and dilated pupils. Blood was taken from the arm, but the symptoms were not relieved, and he died in about half an hour after the commencement of the attack. On examining the contents of the cranium after death, a thin layer of blood was found extravasated in the cells between the tunica arachnoides and pia mater, where those membranes cover the posterior part of the two hemispheres of the cerebrum. In the lower part of the right anterior lobe of the cerebrum the substance of the brain had been ruptured, and underneath this part, between the dura mater and tunica arachnoides, there was a collection of about two ounces and a half of blood. This last had all the appearance of a recent extravasation, and seemed to

afford a satisfactory explanation of the sudden alteration in the symptoms which immediately preceded the patient's dissolution: the hæmorrhage in the first instance having in all probability been checked by the blood-letting which was resorted to both immediately after the accident, and on his admission into the hospital.

SECT. 5.—*Wounds of the Brain and its Membranes.*

Wounds of the dura mater, greatly as they aggravate the ultimate danger of the case, do not in themselves add to the symptoms which immediately follow the accident. It is when the period of inflammation has arrived, and not until then, that the marks of punctured or lacerated dura mater show themselves.

The pia mater and tunica arachnoides are so thin and delicate in their structure, and so intimately connected with each other, and with the brain itself, that we cannot conceive them to be wounded without the brain being wounded also. It would be idle therefore to treat of these two classes of injury as being distinct from each other.

The researches of modern science have demonstrated that the brain is composed of various organs, intended to exercise very different functions: and the division of the substance of the brain made by the hand of the physiologist produces

very different effects, accordingly as it detaches one or another of these organs from the rest of the nervous system. But those distinct results which are obtained with difficulty in experimental physiology, are not met with in cases of accidental wounds. The symptoms produced by the latter are always liable to be complicated with those of concussion, and in a great number of instances are also complicated with those of compression of the brain. Accidental wounds rarely affect the cerebellum and medulla oblongata, or even the more deep-seated and important parts of the cerebrum: and with respect to wounds of the cerebrum, such as are commonly met with, even without the complications produced by concussion, or depression of bone or extravasated blood, we find their effects to be so different in different cases, that they do not admit of being reduced to any general rule; and no data, which we have hitherto obtained, will enable us to predict the exact consequences to be produced by a wound of a given extent, or occurring in a given situation.

In illustration of this observation I may refer to two cases, related, the one by Morgagni *, the other by Dr. Hennen †. In the first of these cases a man received a punctured wound from a sharp instrument, which passed between the eye and the roof of the orbit, penetrating through the latter

* Letter 51. a. 57. † Military Surgery, p. 286.

into the substance of the cerebrum to within a finger's breadth of the lateral ventricle. In the second case the extremity of an iron ramrod entered the cranium immediately below the nasal process of the frontal bone, and penetrated one inch into the anterior lobe of one hemisphere of the cerebrum. In each of these cases the wound was of the same kind, and very nearly in the same situation: but in one of them it was considerably deeper than it was in the other. It might well be supposed that there would have been some correspondence in the effects produced:—but what were the actual results? In Dr. Hennen's case, where the injury was the slightest, the patient was instantaneously deprived of life: while in Morgagni's case, where the injury was greatest, there were no symptoms whatever, and the patient was as if nothing unusual had occurred until the end of the third day, when suppuration was established.

Of these two cases, however, it must be allowed that the latter is to be regarded as being more in accordance with the general rule than the former. The experience of every individual who has had the opportunity of seeing many cases of injury of the head will afford examples of wounds penetrating into the substance of the brain, as well as of incised and lacerated wounds, in which the functions of the brain were not at all impaired, or only slightly impaired in the first instance. Even actual loss of the substance of the brain not un-

frequently takes place without the occurrence of any urgent symptoms, and the patient may go on from day to day, with fresh portions of the brain oozing out of the aperture in the cranium, with his external senses perfect, his mental functions unimpaired, and free from paralytic affection.

It is not however to be supposed that there can be an extensive destruction of a part so important as the brain, without immediate death, or death in the course of a very few hours. In other cases in which the brain has been extensively lacerated, it has appeared to me that without the actual insensibility which follows concussion of the brain, there was a confusion of intellect beyond that which concussion usually produces. In many cases of wounded brain there are convulsive twitches of the muscles of the extremities. In a case in which there was fracture of the parietal bone, several splinters of bone having been driven into the substance of the cerebrum, on the splinters being removed, and when no evident cause of mischief remained except the wound which they had occasioned, the pupil of the eye of the opposite side remained preternaturally dilated. This is what might have occurred in consequence of pressure on the brain. It corresponds also to what we observe in cases of pressure, that wounds of the brain sometimes occasion an unnatural slowness of the pulse. But the more urgent symptoms of pressure are wanting; and the peculiar danger of wounds

of the brain arises, in the great majority of instances, not from the immediate effects of the injury, but from the extensive and intractable inflammation which takes place afterwards.

SECT. 6.—*On some other Symptoms following Injuries of the Brain.*

The symptoms of which I propose to give an account in the present section also belong to the class of those which immediately follow an injury of the brain, that is, which shew themselves previous to the occurrence of inflammation. I have however thought it better to give them a separate consideration, because there may be some doubts as to the exact nature of the injury of which these symptoms are to be regarded as the indication, and because there are several points respecting them which require to be elucidated by further observations.

I. A middle-aged man received a blow on the head and was brought to the hospital with symptoms which were supposed to arise from concussion of the brain. These symptoms subsided in the course of one or two hours, but he remained afterwards completely deaf. His relations declared that his hearing had been perfect up to the period of the accident. He left the hospital at the expiration of three weeks without the smallest amendment.

A young woman received a blow on the head, by which she was stunned for a few minutes. After she recovered from the immediate effects of the accident, she found herself entirely deprived of the senses of smell and taste, and she was in this state when I saw her a month afterwards. The strongest and most pungent odours produced not the slightest sensation when applied to the nostrils; but they nevertheless increased the secretion of the lachrymal glands, or in common language made the eyes water, as under ordinary circumstances.

A middle-aged man slipped while walking, and struck the back of his head against the road; he was stunned for five or six minutes, then recovered so as to walk home. He saw objects double during that evening, and it was observed that he was deaf in one ear. He was kept awake by violent headach during the night. On the following day he had recovered from the double vision, but the other symptoms continued, and in addition to them he discovered that he had entirely lost his sense of smell, and that there was also a partial loss of the sense of taste. He was bled several times, and kept on a low diet, and under this treatment the headach gradually subsided, and at the end of about four months he had recovered his sense of hearing. When he consulted me between five and six months after the occurrence of the accident, he was in the following condition.

His pulse was 72 in a minute. He complained of a sense of noise in the right side of the head, especially in the morning and evening, but not during the night. He was impatient and irritable, especially when troubled respecting matters of business. He had no proper sense of smell, common odours were not perceived at all; but he *felt* the pungency of smelling salts, and they made his eyes water. With his taste he could distinguish bitter, sweet, and sour, but he was unable to distinguish flavours accurately. For example, he could perceive a difference between the taste of hops and that of sugar, but not between that of fennell and parsley; and the flavour of game was the same to him as that of other meat. Bitters had become disagreeable to him, though they had not been so formerly.

The late Mr. Grover of Hammersmith informed me of the case of a gentleman who had been under his care on account of an injury of his head, which entirely deprived him of the sense of smell. After some time, however, he began to recover of this symptom, and at the end of a year his smell was completely restored. I have already given an account of a case in which an injury of the head was followed by total blindness with permanent dilatation of the pupils, and this was found to have depended on a fracture and displacement of the bone in the basis of the cranium producing

pressure on the optic nerves. But here there were other symptoms manifestly depending on compression of the brain itself: whereas no such symptoms existed in the cases which I have just related. It is indeed difficult to conceive that pressure on the brain should exist in so great a degree as completely to destroy an entire class of sensations, and at the same time be so partial as not to affect any other function of the nervous system. On the other hand it is also difficult to regard these as the effects of concussion of the brain: since it is one of the characteristics of concussion to produce no more than a diminution of sensibility, and that diminution, instead of continuing for months or years, is completely relieved in the course of a few days, and probably in a much shorter space of time. However produced, these are not the only examples which experience affords of partial nervous affections following an injury of the brain. Dr. Hennen gives the history of a patient who lost his sexual powers after a wound of the occiput. The same author observes, "The powers of speech are often lost while those of memory remain, and the sight is impaired while the hearing is perfect, and vice versâ. I have met with numerous instances of this, and have had patients who told me that they could hear distinctly what I said, and distinguish my voice from that of others, and have repeated my words as a proof both of this fact, and of their retention of

memory, while they could not distinguish my person or give utterance to their thoughts."*

II. In some cases after an injury of the brain we find the patient attacked by violent convulsions affecting the whole person, and entirely different from those slight involuntary twitches of the muscles which have been already noticed. These convulsions a good deal resemble those which constitute a fit of epilepsy, but are not, like the latter, uniformly followed by a state of profound sleep or stupor. They are more formidable in appearance than in reality, as it is not uncommon for the patient after the convulsions have subsided to recover without any unfavourable symptoms. A young man, a butcher, was standing under a beam of wood which supported a side of beef, when the beam gave way and fell. The side of beef came obliquely on his back, and the beam by which it was supported struck his head. He was not immediately stunned, but in about a minute he became insensible, and in ten minutes more he was seized with a fit, in which he was violently convulsed, so that four or five persons were required to hold him. He was bled, but without relief. The fit of convulsions lasted for nearly three hours, and then suddenly left him. He now complained of pain in the head, but was perfectly sensible. He recovered without any further symptoms, except

* Hennen's Military Surgery, p. 305.

that the pain in the head continued, and on this account he was bled twice or three times in the course of the ensuing week or ten days.

A gentleman on the 8th of September, 1825, was thrown from his horse, and falling on the pavement received a blow on the arm which occasioned a fracture communicating with the elbow joint, and another blow which caused the scalp to be separated for a considerable extent from the anterior part of the head, and also occasioned a fracture of the frontal bone, but without depression. He was taken up in a state of insensibility. He was in this state a few minutes afterwards, when he was seized with violent convulsions, his limbs being moved in various directions, and with such force, that it was with much difficulty that several persons could hold him. The convulsions continued for about half an hour, when they subsided, leaving him in a state of stupor. Blood was now taken from his arm, after which he began to regain his sensibility. On the following day his sensibility was completely restored, and he recovered without any further unfavourable symptoms.

In these cases the convulsions took place within a short period after the occurrence of the accident; but there are others in which the patient is affected in the same manner, after the lapse of several days. Here the convulsions must often be combined with symptoms of inflammation, so that

it may be difficult to determine whether they are to be regarded as connected with the original mischief produced by the injury, or as arising from the subsequent inflammation. The following case however seems to prove that in some instances at least the convulsions which occur even at this second period depend on the former cause and not on the latter.

A lad, 14 years of age, received a blow on the head, and became instantly insensible. He did not utter an intelligible word, nor could he be prevailed on to show his tongue, nor to swallow either medicine or the liquid nourishment which was offered to him. However, he moaned when disturbed, the pupils of his eyes were sensible to the stimulus of light, and there was neither stertor nor paralysis. These symptoms slowly subsided, and no new symptoms, such as could be regarded as the result of inflammation, had shewn themselves, when at the expiration of five days after the accident he was seized with convulsions agitating his whole person. Blood was taken from him by cupping, but this afforded no relief, and in the course of the succeeding twenty-four hours he had as many as fourteen or fifteen attacks, each lasting from one to three minutes. On the following day the state of the pulse not being such as to indicate the necessity of the further abstraction of blood, I determined to pursue an opposite plan of treat-

ment. He was prevailed on to take beef-tea with toast; this was repeated at short intervals, and from the time of his beginning to take more nourishment the convulsions abated, and in the course of another day had wholly ceased. From this time his recovery proceeded uniformly and favourably.

In two of the cases which have been just related the other symptoms were such as might have arisen, and probably did arise, merely from concussion of the brain. This however does not prove the entire absence of extravasation, and there are some circumstances which may lead to the suspicion that something more than concussion is necessary to produce such attacks of convulsions as those which have been described, and which at any rate shew that they may arise from other causes.

First, I have observed in experiments on animals that a wound on the basis of the brain which causes extravasation of blood on the surface of that organ, generally produces convulsions previous to that state of stupor and paralysis which immediately precedes death.

Secondly, the ordinary symptoms of concussion occur, and indeed are more complete, immediately after the injury is inflicted than at any subsequent period; whereas, according to my ex-

perience, convulsions never occur until after a certain lapse of time, when extravasation may have begun to take place.

Thirdly, the following case occurred in St. George's Hospital, under the care of Mr. Keate. A man was admitted who had fallen from the top of a coach, and had struck his head. He was stunned, and continued insensible after being brought to the hospital. At the end of two days, when he had begun to recover from this state of stupor, he was seized with violent convulsions, affecting not only the muscles of his limbs, but also those of his face. The first attack of convulsions continued about six minutes, but this was succeeded in the course of an hour and a quarter by four similar attacks, and in spite of a considerable quantity of blood being taken from the arm. At the end of this time Mr. Keate saw him, and made an incision through the scalp at that part which had received the violence of the injury. A fracture about an inch in length was discovered at the posterior part of the left parietal bone, extending into the lambdoidal suture with a slight depression. At this part Mr. Keate applied a saw, and removed the depressed portion of bone. A small coagulum of blood was found lying on the surface of the dura mater, and this having been exposed there was no recurrence of the convulsions.

I have not observed convulsions to take place

where there are symptoms indicating the existence of considerable pressure on the brain. The pressure in these cases does not destroy the functions of the brain; it seems to act merely as a cause of irritation, and the operation of it may be compared to that of an exostosis, or other tumor, in producing fits of epilepsy. The circumstance of convulsions taking place after the lapse of some days when they did not take place in the first instance, may probably depend on the brain having been rendered more susceptible by the loss of blood and other methods of depletion to which it was necessary to have recourse for the relief of the more early symptoms.

III. Occasionally after an injury of the head we find the patient in a state of furious delirium, raving and unmanageable. A man who had received a blow on the head was brought into St. George's Hospital in this condition, uttering loud exclamations, abusing and striking those who were near him, so that it was necessary for several persons to assist in holding him by force as if he were a maniac, while blood was being taken from his arm. As the blood flowed the delirium left him. He remained with slight symptoms of concussion; and these also gradually subsided, leaving the patient in a state of health. Cases such as this might lead us to regard this state of furious delirium as the consequence of mere concussion of the brain. But the same observations may be made respecting these

cases, as respecting those in which there are convulsions. The absence of the more urgent symptoms of pressure on the brain does not absolutely prove that no degree of pressure actually exists: and instances occur in which this state of the sensorium is manifestly combined with depression of bone or extravasated blood. For example:— A middle aged man, who had received a blow on the head, was brought to St. George's Hospital an hour after the occurrence of the accident, in a state of raving delirium. There was a wound over the right eye-brow, and a fracture of the frontal bone extending obliquely upwards with a considerable depression. The depression, however, was not elevated, as the delirium subsided on blood being taken from the arm. After this the man fell into a state of insensibility, from which, however, he could be roused, and then he complained of head-ach. On the following day he was more sensible, and from this period he recovered without any bad symptoms; but it was observed that the pupil of the right eye remained preternaturally dilated, and that it contracted very feebly on exposure to light.

A middle aged man fell from a cart, and struck his head against the wheel. In about half an hour he was brought to St. George's Hospital. He was sensible, and complained of pain in the head, but more of pain in one arm, which was discovered to have been fractured. At this time he had no

other symptom except that the right pupil was more dilated than the left. There was a wound of the scalp and a fracture with a slight depression of the anterior and inferior part of the left parietal bone. He was put to bed, and while his head was being shaved he became delirious, furious, and unmanageable, so that it was necessary to restrain him by main force. On being bled, he became faint, tranquil, but not perfectly sensible. In half an hour the faintness had subsided, and he relapsed into his former state of raving delirium. He was again bled, and became more tranquil, but still not perfectly sensible. In the evening, twelve hours after his admission, as he continued insensible, Mr. Gunning applied the trephine in the situation of the fracture, and removed a portion of bone. The man appeared to be relieved, and spoke rationally after the operation. On the following day he was quiet, and sensible when roused, but not so to ordinary impressions. Early on the next morning he fell into a state of stupor, with stertorous breathing, a slow pulse, and cold extremities, and soon afterwards expired. On dissection there was discovered a disjunction of the coronal suture in some degree separating the parietal and frontal bones from each other. From a drachm to a drachm and a half of blood was extravasated between the dura mater and the right side of the frontal bone, and the right parietal bone. There was also in some parts a slight degree of extravasation in the cells between the tunica arachnoides

and pia mater. A small quantity of pus was found both between the dura mater and the bone, and between the tunica arachnoides and pia mater.

In another case where the patient was admitted into the hospital with the same symptoms of furious delirium, after the delirium had subsided he fell into a state of perfect stupor, from which he could not be roused until twenty ounces of blood had been taken from the arm: and when the immediate effects of the blood-letting had subsided he again relapsed into the same state of stupor. The pupil of one eye was observed to be preternaturally dilated, contracting in some degree, but imperfectly, on exposure to light. This patient ultimately recovered, and of course it was not possible to be made acquainted with the exact nature of the injury which he had sustained, but I was led to regard the state of complete insensibility in which he for some time lay, joined with the dilatation of one pupil, as a sufficient indication of the existence of pressure on the brain to a greater or less extent.

From the evidence here adduced there seems reason to believe that furious delirium and convulsions occur after an injury of the head under nearly parallel circumstances. The former symptom, like the latter, may be produced by pressure on the brain, not however by such a degree of pressure as threatens completely to annihilate the

function of that organ, but by that smaller degree of pressure which operates merely as a source of irritation. It must be admitted, however, that the subject is not exhausted, and that further observations are required for its complete elucidation.

Sect. 7.—*Treatment of concussion of the Brain.*

Although the treatment which is required in the first period which elapses after an injury of the head is neither various nor complicated, yet, in order that it should be conducted with advantage, it is necessary that many circumstances should be taken into consideration. We are called upon not only to do that which is to contribute to the relief of the present symptoms, but to guard against future ill consequences, and where no symptoms actually exist we are to look to those which may occur hereafter, and which proper measures of precaution may enable us to prevent or mitigate.

It is commonly remarked that two opposite methods of treatment have been recommended in cases of concussion of the brain; the one consisting of the exhibition of stimulants and cordials: the other comprising blood-letting, and what are usually termed antiphlogistic remedies. Here, however, as on many other occasions, the oppo-

sition of opinion is probably greater in appearance than in reality; and I am inclined to believe that if the advocates of the respective systems were questioned on the subject, it would be found that the views which they entertain are not essentially dissimilar. I suppose that none of those who have suggested the exhibition of stimulants would actually be inclined to apply this practice to cases in which the pulse has regained its strength and regularity; and, on the other hand, I conclude that no one among those who have advised the use of the lancet would think of taking away blood when the patient lies with pale cheeks, and cold extremities, and a feeble and intermitting pulse, or would refuse to resort to the cautious exhibition of cordials and stimulants where these symptoms are so urgent that he is manifestly in danger of sinking, in consequence of the depressed state of the circulation which has followed the first shock of the injury.

Cases of this last description are however in reality of rare occurrence: and there are indeed sufficient reasons why we should regard that condition of the system which approaches to syncope, as being, in the great majority of instances in which it exists, conducive to the patient's welfare, and why we should wish to prolong, rather than to abridge, the period of its duration. The same blow which gives rise to symptoms of concussion frequently occasions the rupture of some small

vessels within the cranium. The same state of the system which produces an enfeebled action of the heart is calculated to prevent the ruptured vessels from pouring out their contents; and the longer it continues, the less is the danger of internal hæmorrhage. If we artificially excite the action of the heart by the exhibition of wine and ammonia, we are in danger of inducing symptoms of pressure on the brain. If on the contrary we watch the gradual restoration of the pulse, and at the proper moment take from the arm a sufficient quantity of blood to prevent the heart resuming its wonted action, it is probable that we may often succeed in checking or arresting an extravasation of blood on the surface of the brain, or among its membranes, which might otherwise prove fatal. There is also the following very important circumstance which is not to be overlooked in this part of the inquiry. A state of depression is followed by a state of excitement. As the patient recovers from the former, the pulse, with respect to fulness and strength, becomes raised above the natural standard, and it is evident that this affords an additional argument in favour of the practice which is here recommended.

The same views respecting the prevention of internal hæmorrhage, which incline us to take blood from the arm in the first instance, cannot fail to influence our conduct afterwards. There is no evident reason why vessels, which have

once bled, should not be liable to bleed again within the cranium, as well as in other situations. I have already mentioned a case in which a patient, who was apparently going on favourably, suddenly expired in consequence of such secondary hæmorrhage, on the fourth day after the occurrence of the injury. If similar cases are rare, this may reasonably be attributed to the remedies which modern surgeons, with few exceptions, do not fail to employ. At any rate, where so much is at stake, we are called upon to neglect no measures of precaution; and however small the danger from this cause may really be, the surgeon should provide against it, by frequently inquiring into the state of his patient: by urging the necessity of continued repose of body and mind, by limiting him to a scanty vegetable diet, by the exhibition of laxative medicine, and by the abstraction of blood, whenever the state of the pulse indicates that this may be done with propriety.

Independently of the foregoing, there are other considerations which might of themselves lead us to adopt the same method of treatment. I believe that the patient in cases of concussion will generally spontaneously recover from that state of insensibility in which he remains after the vigour of the circulation is restored. But, nevertheless, from the best observations which I have made on the subject, I cannot doubt that his recovery is much assisted by repose and low diet, and de-

pleting remedies. Often, immediately after being bled, the patient, who before was in a state of stupor, exhibits manifest signs of returning sense. Further, it may be urged that concussion is liable to be followed by inflammation of the brain, or its membranes. Now I do not mean to say that such inflammation can always be prevented, or that the abstraction of very large quantities of blood will make the patient a better subject for it if it should occur; but it seems reasonable to suppose, and our experience of these cases, and of other cases bearing an analogy to them, confirms the opinion, that there is less danger of inflammation, where the antiphlogistic treatment has been carried to a moderate extent, and where the patient has been kept in a state of perfect quiet, than where bleeding and laxative medicines have been neglected, and the patient has been allowed to exercise his body and mind, and to live on his usual diet.

The quantity of blood which the vessels of the brain contain depends very much on the position of the head with respect to the rest of the body. Not only in cases of concussion, but in all other cases where there has been an injury of the brain, or one likely to affect the brain, the head and shoulders should be raised by additional pillows, so that the blood may have an easy descent to the right side of the heart. In addition to this, in severe cases of concussion, the head should be shaved, and compresses should be applied con-

stantly moistened with a cold evaporating lotion. Opiates should be avoided. It is difficult to conceive what good purpose they can ever have been expected to answer; and, at any rate, they tend to constipate the bowels, and not unfrequently cause a confusion of symptoms, the patient complaining of head-ach, of which it is difficult to say whether it belongs to the injury itself or to the opium.

In taking a view of the various satisfactory reasons which may be urged in favour of a particular plan of treatment in cases of concussion of the brain, we must not overlook the circumstance that this treatment may be carried too far: and we must endeavour to avoid the error which I have known some surgeons fall into, of resorting to a too free use of the lancet. At first when the reaction of the heart has taken place, it may be right that the patient should lose a considerable quantity of blood, so as completely to subdue the force of the circulation. Afterwards, for the most part, it is only an occasional blood-letting that is required, and that to a moderate extent. It has appeared to me that this mode of proceeding has usually done more, both towards relieving the present symptoms, and preventing subsequent inflammation, than a more active system of depletion: and where very large quantities of blood have been already taken away, if inflammation should shew itself, our resources are comparatively limited, and

we are not able to meet it with that energy and vigour which the circumstances of the case require.

Where bleeding has been carried to a great extent, symptoms frequently occur which in reality arise from the loss of blood; but which a superficial observer will be led to attribute to the injury itself, and concerning which indeed it is sometimes difficult, even for the most experienced surgeon, to pronounce in the first instance to which of these two causes they are to be referred. Repeated copious blood-letting is of itself adequate to produce a hardness of the pulse, which we shall in vain endeavour to subdue by persevering in the same system of treatment. In many individuals it will produce head-ach and confusion of mind, not very different from what the injury itself had previously occasioned. These things may be observed especially in young females who are disposed to hysteria; and whom I have often known to suffer from a continued aggravation of such symptoms as I have described, while the system of depletion has been continued, recovering immediately on the use of the lancet being laid aside, and on their being allowed to take solid nourishment, with occasional doses of the carbonate of ammonia*.

* Dr. Marshall Hall has published, in the thirteenth volume of the Medico-Chirurgical Transactions, some excellent practical observations on the effects of copious blood-letting, many of which are applicable to the cases mentioned above.

SECT. 8. *Treatment to be employed in cases of Compression of the Brain not complicated with Wounds of the Brain or its membranes.*

When we consider the variety of circumstances under which compression of the brain may follow an injury of the head, and the different effects which it produces in different instances, we cannot suppose that the same mode of treatment will be found applicable to all cases, or that any such simple rules can be laid down for the conduct of the surgeon as those which we have to guide us in cases of concussion.

There is one most important complication which aggravates very much the ultimate danger, not only of these, but of all other cases of injury of the head; namely, the existence of a wound or laceration of the dura mater. This circumstance also tends to modify if not to alter the surgical treatment which is to be adopted. At present I suppose that such a complication does not exist; that the brain suffers from pressure, but that the dura mater is entire, and that there is no exposure of the important parts which are contained within it.

Where the symptoms of compression are such that the patient's life is manifestly in danger, there can be no question as to the propriety of removing

the cause on which they depend, where that can be accomplished by means of a surgical operation.

In cases in which there is a fracture and depression of bone, it is generally in our power to remove or elevate the depression. If there be a wound of the scalp we may at once resort to the application of the trephine, or in some cases, where the cranium is not only fractured but splintered, we may do what is required by means of the forceps and elevator, without the aid of the saw. Where however the scalp remains entire, it will of course in the first instance be necessary to divide it, so that the bone may be completely exposed, and that the surgeon may be enabled to trace the extent of the mischief which has been inflicted on it.

An operation is also to be resorted to in those cases in which there are symptoms of pressure depending on hæmorrhage between the dura mater and the bone. But here another question arises: what is the evidence which is to enable us to detect a mass of extravasated blood in this situation, and how are we to determine what is the exact part of the cranium which should be perforated by the trephine? I must here refer to an observation which has been already made. Blood is seldom poured out in any considerable quantity between the dura mater and the bone, except in conse-

quence of a laceration of the middle meningeal artery, or one of its principal branches, and it is very rare for this accident to occur except as a consequence of fracture. If therefore we find the patient lying in a state of stupor, and on examining the head we discover a fracture with or without depression, extending in the direction of the middle meningeal artery, although the existence of an extravasation on the surface of the dura mater is not thereby reduced to an absolute certainty, it is rendered highly probable, and the surgeon under these circumstances would neglect his duty if he omitted to apply the trephine. If it happens that no extravasation is discovered, the operation does not leave the patient in a worse condition than he was in before: but if there be an extravasation, although it does not place him in a state of absolute security, it relieves the present symptoms, and gives him a chance of recovery which he would not have had otherwise.

Where no fracture is discoverable, yet if there is other evidence of the injury having fallen on that part of the cranium, in which the middle meningeal artery is situated, the use of the trephine may be resorted to on speculation, rather than that the patient should be left to die without an attempt being made for his preservation. I cannot indeed adduce any particular experience of my own in favour of what is here recommended; but I conceive that the instances which

have been recorded, in which the middle meningeal artery has been ruptured without any fracture of the bone, and the known fact that there is sometimes a fracture of the inner table of the skull, while there is none of the outer table, sufficiently justify such an experiment in desperate cases, or even in those in which there is much danger. Our judgement may be assisted on those occasions by attending to the rule laid down by Mr. Abernethy: "If there be so much blood on the dura mater as materially to derange the functions of the brain, the bone to a certaint extent will no longer receive blood from within; and by the operation performed for its exposure, the pericranium must have been separated from its outside. I believe that a bone so circumstanced will not be found to bleed, and I am certain that it cannot bleed with the same freedom and celerity as it does when the dura mater remains connected with it."*

In applying the trephine on account of a fracture with depression, the removal of a small portion of bone is generally sufficient; and there is indeed no sufficient reason for removing any considerable portion of the cranium. But in resorting to the application of the trephine, on account of an extravasation of blood on the surface of the dura mater, our practice should be different. The bone

* Abernethy on Injuries of the Head. Edit. 1797. Pp. 33, 34.

should be removed extensively, so as to expose at any rate a large portion of the surface of the dura mater, in which the extravasation has taken place. The necessity of attending to this rule, was impressed on my mind by a case which came under my care in the hospital, in the year 1814. A man was admitted with a fracture of the parietal bone, and a large extravasation of blood, between the cranium and the dura mater. I removed two triangular pieces of bone with a straight saw, and a large quantity of blood, partly fluid, partly coagulated, escaped through the opening that was made. The symptoms under which the patient laboured, were immediately relieved, and for several days he appeared to be going on favourably. But suppuration ultimately took place on the surface of the dura mater, wherever the extravasation had separated it from the bone. The opening made by the saw being in great measure occupied by granulations from the dura mater, afforded no opportunity for the free escape of the pus which was formed in the neighbourhood, in consequence of which the abscess burrowed between the dura mater and the bone, separating them from each other, much farther than they had been separated originally. As soon as I had discovered what was taking place, I removed another portion of bone with the trephine; but the mischief had now become so extensive that the operation gave scarcely temporary relief, and the patient died. Reflecting on the case afterwards,

I could not but acknowledge that if I had removed a larger portion of the bone in the first instance, so as to expose the extravasated blood more completely, the pus which was afterwards secreted could have been freely discharged, and the life of the patient would in all probability have been preserved.

But the most common cause of pressure on the brain is an extravasation of blood within the cavity of the dura mater. Here if there be any large collection of blood in one mass, it is generally in the basis of the cranium; sometimes in the substance of the brain, at other times in the cells between the tunica arachnoides and pia mater. In either of these cases it is beyond the reach of an operation. There may indeed be a large extravasation of blood on the superior surface of the cerebrum immediately beneath the dura mater: but if such an extravasation does exist, in what manner are we to become informed of its existence? We may regard it as a general rule, that an operation is not applicable to cases of compression of the brain from internal extravasation. But there are few general rules in surgery, to which some exceptions may not be made. Let us suppose a case in which a considerable portion of bone has been already removed; in which the dura mater is seen exposed, of a blue colour, lifted up by a collection of blood beneath it, and bulging as it were into the aperture, which has been made in

the cranium. Are we justified in puncturing the dura mater for the purpose of allowing the extravasation to escape? Every thing that we see of wounds of the dura mater tends to prove the very great danger of this kind of injury. The dura mater should never be wantonly punctured; but we cannot doubt that, in what may be regarded as desperate cases, it must be right to give the patient the chance, small as it may be, which the division of the dura mater affords him. The combination of circumstances which would lead to such an operation must be very rare, but it may occur nevertheless, and the surgeon should be prepared to meet it. The late Mr. Chevalier was called to a child a year and a half old, who had received a severe blow on the head. The child lay in a state of insensibility, and was affected with convulsions. There was no wound of the scalp, but on an attentive examination of the head the fontanel appeared to be somewhat elevated. Mr. Chevalier was led therefore to make a crucial incision of the scalp, by dissecting up the corners of which he exposed the fontanel. He then made an angular incision of the right side of the fontanel, and raised the membrane forming it so as to expose the surface of the dura mater, beneath which the purple colour of extravasated blood was plainly to be seen. A puncture being made carefully with a lancet, the blood issued at first with considerable force spouting to the distance of a foot. Three or four

ounces of blood escaped; the symptoms were immediately relieved, and the child recovered without any further unfavourable symptoms*.

The following case, which is still more remarkable, was communicated to me by Mr. Ogle of Great Russell Street, in whose practice it occurred some years ago.

A woman, who kept a cellar in Monmouth Street for the sale of second-hand linen, &c. fell from the street, head foremost, to the bottom of the cellar. When taken up she was in a state of total insensibility. Mr. Ogle being immediately sent for found her lying as if in a fit of apoplexy. He ordered her head to be shaved, and, on examining it afterwards, discovered no wound of the scalp, but observed that she flinched very much when pressure was made on one spot near the anterior and superior angle of one of the parietal bones. Having made an incision of the scalp at this part, he could perceive no appearance of fracture. Nevertheless as the woman was manifestly in imminent danger, he thought it expedient to remove a portion of the bone with the trephine. Immediately on the bone being removed, the dura mater of a dark colour rose into the opening nearly as high as the external surface of the cranium. Convinced from its appearance

* Medical and Physical Journal, Vol. VIII. p. 505.

and from the feeling of tension communicated to the fingers, that a fluid was interposed between it and the brain, and that that fluid was blood, Mr. Ogle ventured to puncture the dura mater with the point of a lancet. The puncture was instantly followed by a stream or jet of blood, which spirted out to the height of some feet. Immediately on the blood being discharged, the woman, who till that moment had continued totally insensible, opened her eyes. After looking about her, apparently amazed, she exclaimed, "What is the matter? what are you doing with me?" and was able to give a clear account of the manner in which the accident had occurred. From this time she recovered without any untoward symptoms. It was impossible to ascertain the precise quantity of blood which escaped through the opening of the dura mater, but Mr. Ogle supposes it to have been about three quarters of an ounce. But cases such as these are to be regarded as out of the common course of events. The ordinary cases of extravasation within the dura mater from injury are to be treated as we treat cases of apoplexy, or of paralytic seizure, in consequence of a blood-vessel within the head being ruptured from disease: on the same principle as that on which we treat other cases of internal hæmorrhage. Take blood from the arm so as to reduce the force of the heart's action. Repeat this, or take blood by cupping, as soon as the pulse has recovered from the effect of the former blood-letting: ad-

minister active saline purgatives; let the head be shaved and bathed with a cold lotion, being kept at the same time in an elevated position; and although such a plan of treatment will not effect the cure of a patient who lies with stertorous breathing in a state of perfect stupor, many will recover under it, in whom the symptoms of pressure have been very urgent. In some instances a slight improvement is perceptible from day to day, until at the end of two or three weeks the patient seems to be restored to his natural condition. In other instances his recovery is less complete, and a partial loss of nervous power may remain for many months; or such a memorial of the accident as, a dilated pupil, a benumbed hand, or a paralytic limb, may exist for a much longer period, for years, or even during the remainder of the patient's life.

The foregoing observations are intended to relate to those cases in which pressure operates on the brain in such a manner as considerably to impair its functions. There are many other cases in which there is reason to believe that there is extravasation of blood within the cranium, although not in sufficient quantity to produce any formidable symptoms. I have already observed that it is sometimes difficult to distinguish such cases from those of concussion of the brain; and

it is therefore fortunate that, even where the distinction is plain, it leads to no difference of treatment.

It is also not uncommon for a fracture of the cranium to exist, with even a considerable depression of bone, and for the patient to suffer from it only in a very small degree, or to have no symptoms at all. Mr. Abernethy has published an account of several cases of this description, in which there were not only no symptoms at the time, but none at any subsequent period, although no attempt was ever made to restore the depressed bone to its natural situation, and I might add to the catalogue many similar cases which have fallen under my own observation; but the fact is now well known to every practical surgeon; and in doing so, I should unnecessarily occupy the time and attention of the Society. Here the condition of the patient immediately after the accident does not indicate the necessity of an immediate operation; and a very interesting and important question arises as to the course which the surgeon should pursue, and whether he should, or should not, under these circumstances, resort to an operation for the purpose of elevating or removing the depression?

The removal of a part of the cranium is not to be viewed as a trifling matter, or as an operation which we are warranted in performing without a very sufficient reason. 1st. The process, by

which the aperture in the cranium is filled up with new bone requires many years for its completion, even where the aperture is small; and where it is large, that process is never completed at all. The deficiency of the cranium must render the patient much more liable to suffer from accidental injury than he would have been if the cranium had been perfect. The cicatrix must be more easily penetrated by a cutting instrument, and more likely to give way under the force of a severe contusion than the bone itself; and in the second volume of the Edinburgh Medical Essays, a case is recorded in which, during a violent fit of the hooping-cough, such a cicatrix was lacerated, the dura mater torn, and the brain made to protrude through the wound, the patient dying with paralysis of the limbs five days afterwards. 2dly. Without referring to those remote consequences, or to cases in which it has been carelessly or improperly performed, the operation of the trephine is not to be regarded as one altogether free from danger. I saw a case in which a surgeon was induced to apply the trephine, although, as the event proved, there was no sufficient reason for so doing. The dura mater, at the time of the operation, was found adhering to the bone, and in a healthy state. Nevertheless, when the patient died some time afterwards, and the body was examined, the external layer of the circular portion of the dura mater which had been exposed in consequence of the trephine being employed, was found in a state

of slough, and it was a matter of doubt whether the sloughing did or did not extend through the whole thickness of the membrane. In another case, which occurred in St. George's Hospital, Mr. Gunning was induced to apply the trephine, in consequence of a suspicion that suppuration had taken place between the bone and the dura mater. The suspicion proved to be ill-founded: the dura mater was in a perfectly natural state, and there was bleeding from the small vessels on its surface after the renewal of the bone. The patient died afterwards in consequence of inflammation of the brain and pia mater. On dissection, besides the usual appearances produced by such inflammation, it was found that the circular portion of the dura mater which had been exposed in the operation was in a state of slough, the slough extending through its whole substance. Everywhere else the dura mater was in a natural state. It is reasonable to conclude that the sloughing of the dura mater in these cases was the consequence of it being deprived of its natural protection, and of the supply of blood which it receives through the vessels of the bone.

Now if the patient, whose case was mentioned last, had survived some time longer, what would have happened? The slough of the dura mater would have separated, and the brain losing the support which it derives from this firm membrane, and having its vessels loaded with blood would,

in all probability, have become protruded in the form of what is denominated a *hernia cerebri*. Such a protrusion would not indeed aggravate the danger of the case, where suppuration had already taken place within, but it might make the difference of life or death to the patient where the inflammation had not begun to terminate in this manner.

That the removal of a portion of the cranium may in itself be sufficient to make the patient liable to this formidable and dangerous disease of *hernia cerebri*, would appear sufficiently probable without any particular experience on the subject; and for evidence that this is actually the case, we need not go further than the Transactions of this Society. I allude to the very important paper by Mr. Stanley, published in the eighth volume of this work. In every one of four cases, which are here recorded, in which a portion of the bone of the cranium had been removed by the trephine or straight saw, the dura mater was found not to have suffered from the injury, yet a *hernia cerebri* presented itself some days afterwards. In one case it is distinctly stated that the dura mater was in a state of slough at the time of the protrusion beginning to take place; but it does not appear whether in the other cases it gave way in consequence of sloughing or ulceration.

Taking all these facts into consideration, we cannot refuse our assent to the proposition that

the perforation of the skull, and the removal of a part of it is attended with a certain degree of danger, and the evidence hitherto adduced is in favour of the opinion, that "it is most prudent to abstain from the use of the trephine, where there is a fracture with depression of the cranium producing at the time no unfavourable symptoms."

But much may be said on the other side of the question; and at any rate there are other points to be considered before we can arrive at a positive conclusion on the subject.

1st. Although in some cases sloughing of the dura mater and *hernia cerebri* may follow the operation of the trephine, there are many other cases in which this never happens, the dura mater granulating, and the wound cicatrizing favourably.

2dly. Notwithstanding that a depression of the cranium is allowed to remain in many instances without it being productive of any bad consequences, there are numerous examples of such an injury being followed by extensive mischief. Suppuration takes place on the surface of the dura mater, an abscess is formed between that membrane and the bone, and ultimately (as I shall endeavour to explain on a future occasion), if the abscess has no opportunity of discharging itself externally, the inflammation extends to the parts below, and there is suppuration of the tunica arach-

noides and pia mater, leading inevitably to the patient's destruction.

3dly. Where a depression of the cranium is allowed to remain, it sometimes happens that symptoms arise after a considerable lapse of time, which may even endanger the life of the patient, and which are to be attributed to the continuance of the depression, although it had occasioned no inconvenience in the first instance. I saw a well-marked and very instructive case of this kind several years ago under the care of Sir Everard Home, of which Sir Everard has published some account in the Philosophical Transactions for the year 1814. A gentleman received a blow on his head in consequence of having fallen from his horse, which occasioned a fracture and depression of one parietal bone. The depression was two inches and a quarter in its longest, and an inch and a half in its shortest diameter, and in one part nearly three quarters of an inch below the natural level. At the end of six weeks the early symptoms had subsided, and the patient was considered well. As soon however as he returned to his usual occupations, various nervous symptoms began to shew themselves which manifestly depended on the continued pressure on the brain. These symptoms instead of diminishing, increased in severity, and on some occasions were such as to occasion serious alarm; in consequence of which at the expiration of three years from the time of the accident Sir

Everard was induced to remove nearly the whole of the depressed bone with the trephine. The wound cicatrized readily. The symptoms which existed before the operation were immediately relieved, and, as I have been informed, never recurred.

In this case the fracture and depression were very extensive, and probably these ultimate ill consequences, or secondary effects of the injury, may be avoided if we consider it as a general rule, that an extensive or deep depression should lead to the application of the trephine, although the same necessity does not exist where the depression is small.

This rule however affords us no assistance with respect to the greater danger arising from the chance of suppuration between the bone and the dura mater; this being as likely to occur where the depression is small as where it is large.

Sir Astley Cooper has stated in his Lectures on Surgery* that there is a great difference as to the danger of inflammation and suppuration of the membranes of the brain, between those cases in which the fracture and depression is complicated with a wound of the scalp, and those in which the

* The Lectures of Sir Astley Cooper, Bart. by F. Tyrrell, &c. Vol. I.

soft parts are uninjured; such mischief being much more liable to occur in cases of the first kind than in those of the second: and on these grounds he recommends that, where this complication exists, we should not hesitate to apply the trephine; and on the other hand, that, where it does not exist, we should carefully abstain from adding to the injury, by dividing the scalp and exposing the fracture. But many persons undoubtedly have recovered in whom there was at the same time a wound of the scalp, and a fracture and depression of the cranium, although no operation was resorted to. The cases to which I have before alluded as published by Mr. Abernethy, are all examples of this fact; and I recollect other similar cases which have fallen under my own observation. I have conversed also with several other surgeons whose experience on the subject has corresponded with my own, and all these circumstances led me in the first instance to doubt the accuracy of Sir Astley Cooper's conclusion*.

* The following statement was furnished to me by my friend and colleague, Mr. Rose, from notes which he made while surgeon to the Coldstream Regiment of Guards during the Peninsular war:—

"In the battle of Talavera de la Reyna, which was fought on the 27th and 28th of July 1809, the brigade of guards lost about 600 men in killed and wounded. Amongst the latter were a considerable number of cases of wounds in the head. There were a great many cases of fracture of the bones of the cranium with and without depression, and from the cause which

The question however is not to be decided merely on these premises. Many persons may do well without an operation who suffer from what Sir Astley Cooper denominates a compound fracture of the cranium, and yet it may remain to be determined what is the probability of suppuration taking place in these cases, as compared with those in which the scalp escapes uninjured?

For many years I have preserved notes of a large proportion of the cases of injury of the head, which

produced them, these were, of course, in every instance complicated with wounds of the scalp.

"On the 3d of August, in consequence of some military movements, the town of Talavera, in which the hospital had been formed, became exposed, and an order was given for all the wounded who could march, to leave it. This was so speedily obeyed that no time was afforded to make any selection. The worst cases necessarily remained, but among those who undertook the march there were twelve or fourteen with wounds in the head, accompanied with injuries of the bone, at least four or five of whom had both tables of the skull fractured, and two of them, along with fracture of the os frontis, had each the globe of one eye totally destroyed. In none of them had the trephine been applied, nor had any attempt been made to remove splinters of bone. After leaving Talavera, they were exposed to a burning sun, and to very severe fatigue. Every evening, after the day's march, Mr. Rose collected the wounded round him, examined and washed their wounds, dressing with care those that particularly required it. Cold water was the principal application employed. The retreat occupied sixteen days, in spite of which, and with no other treatment than that which has been described, every one of those who were wounded in the head recovered."

it has fallen to my lot to witness. Among them, of course, are many in which there was fracture, with or without depression, followed by suppuration between the dura mater and the bone. On referring to these for further evidence on this interesting subject, I find that the cases in which suppuration takes place where the scalp is entire have been comparatively rare; bearing a very small proportion indeed to those cases in which suppuration has followed a fracture complicated with a wound of the scalp. Such is the result of my own experience, during a considerable period of time, and which I am enabled to give not merely from a general recollection of what I have seen, but on the authority of written notes, made at the bedside of the patients, and for the most part before the question which they illustrate had ever presented itself to my mind.

Taking all these facts into consideration, and endeavouring to give its proper value to what may be urged on either side of the question, I cannot but acknowledge, whatever may have been my first impression on the subject, that it appears to me at this moment that the views of Sir Astley Cooper are well-founded; and that, in those cases in which a depression of bone exists without any symptoms, or with only trifling symptoms arising from it, the surgeon can follow no better general rule than this: if the depression be exposed in consequence of a wound of the scalp, let him ap-

ply the trephine, and elevate the depression: but if there is a depression without a wound of the scalp in consequence of the accident, let him not make such a wound by an operation. An exception may perhaps be properly made with respect to very extensive depressions of the cranium, which it may be prudent to expose and elevate at all events, not because there is a greater danger of suppuration from these than from smaller injuries, but on account of the ultimate ill consequences which the patient may experience if the brain be left permanently subjected to a very considerable pressure.

I have only two further observations to offer before I leave this part of the inquiry.

The first is, that even where the fracture and depression of bone is complicated with a wound of the scalp, there is not, in all cases, the same absolute necessity for the application of the trephine. The bone may be depressed in such a manner as to allow the escape of the pus which is formed on the surface of the dura mater, although the depression is not elevated; or its position may be such as that the abscess can find no external opening. The danger in the first case must be infinitely greater than that in the second. A boy was admitted into St. George's Hospital who had received a severe blow on the head. The scalp was wounded, and there was a fracture and depression of bone: but as the depressed bone

was not of a large size, as it was not much below its natural level, and as it produced no symptoms of importance, I did not apply the trephine. Eight or nine days after the accident, the boy complaining of pain in the head, the pulse having become frequent, and there being an expression of anxiety in the countenance, I divided the scalp beyond the wound which already existed, so as to expose the fracture more completely. I now discovered that suppuration had taken place beneath the bone, but the edge of the depressed bone was so much below the level of the bone in the neighbourhood that there was a very free opening for the escape of the pus, which was distinctly seen at the bottom of the wound rising and falling as the pulsations of the brain were communicated to it. No further operation was performed. The symptoms were relieved by the more free division of the scalp; the wound healed, and the patient left the hospital quite recovered about five weeks after his admission.

The last observation relates to a circumstance, the possible occurrence of which adds to my unwillingness to divide the scalp in cases of fracture and depression of the cranium, where it has not been already divided by the violence inflicted on it at the time of the accident. I have seen two cases in which the scalp remained entire, but in which the bone was fractured and depressed, and the dura mater lacerated, and the brain itself wounded by the edges of the fracture. Such a

complication may be sufficiently dangerous under any treatment; but if we are to judge from the analogy of what occurs, not only in cases of simple and compound fractures of the extremities, but of other mechanical injuries, we must suppose that the danger would be much aggravated by the addition of a wound of the scalp. Suppuration of the brain and its membranes, to a greater or less extent, must necessarily ensue, if they are exposed under the circumstances which have been described, and it seems not improbable that such mischief may be avoided if the scalp be allowed to remain entire for their covering and protection. Of course this remark applies only to the conduct of the surgeon in the first instance. The treatment to be pursued, if, at a later period suppuration should be actually established, is not under our present consideration.

Sect. 9. *Treatment of Contusions and Wounds of the Scalp.*

As the treatment to be employed in cases of concussion and compression of the brain involves questions of peculiar interest, which demand the earliest attention of the surgeon in the greater number of instances of injury of the head, I have thought these subjects not undeserving of our first consideration. It remains for us to determine the course which is to be pursued in other cases, of which the principal are; those of wounds and contusions of the scalp; of fracture, unattended with

depression, and where there is no reason to believe that there is extravasation of blood beneath the bone; and those of wounds of the brain or its membranes.

Extravasation of blood in the cellular texture of the scalp seems to require for the most part no particular attention. Here, as elsewhere, the swelling made by the extravasation gradually becomes less prominent, and more diffused, and no great length of time elapses before it disappears altogether. I was consulted concerning the case of a young gentleman, in whom there was an effusion of blood under the scalp, extending from the superciliary ridges to the nape of the neck, and from ear to ear. When I saw the patient the blood appeared to be still in a fluid state, or at any rate not completely coagulated; and it had been poured out in such quantity that the cranium itself was not in any part perceptible to the touch: nevertheless, in the course of a few weeks, with no other application than that of a cold lotion, the whole tumor disappeared.

It is evident that, whatever was the vessel ruptured in this instance, it must have continued to bleed for a considerable time before so large an extravasation could have taken place. In another case in which a vessel under the scalp was bleeding in the same gradual manner, and threatening to produce similar results, I was

enabled to ascertain the point at which the extravasation began, and by making pressure in this situation to stop its further progress. The patient was a child who had received a blow on one temple, I believe, from the corner of a table. Soon afterwards the nurse observed a swelling in the part which had been struck, which however attracted but little attention at the time. On the following day the swelling had increased, and the parents brought the child to London, a journey of several miles. During the journey, the swelling became still larger, and when I was consulted soon after their arrival in London, it occupied the whole temple. I directed the child to be kept quiet, and the head to be bathed with a cold lotion. Next day, however, the swelling had extended over a considerable part of the head adjoining the temple, presenting an appearance exactly similar to that which was observed in the case last mentioned. I now inquired of the nurse, more particularly than I had done before, what was the exact spot at which the head had been struck, and in which the swelling was first discovered; and having ascertained this, I applied a graduated compress and bandage, such as is used after bleeding in the temporal artery: and from this time there was no further increase of the swelling.

Punctured and incised wounds of the scalp require (in the first instance at least) no pecu-

liar treatment. Nothing that has occurred in my own experience would lead me to believe that there is any reason why adhesive plaster should not be employed to approximate the edges of a wound of the scalp, as well as those of a wound elsewhere. Erysipelas not uncommonly follows a wound of the scalp, but it seems to me to occur equally, whether the wound is dressed with adhesive plaster or in any other manner.

When a portion of the scalp is separated in the manner of a flap, so as to expose the tendon of the occipito-frontalis muscle, or the pericranium, if it be carefully and neatly replaced, it will often become united by the first intention to the parts from which it has been separated. In many cases however there will be no adhesion, as where some time has elapsed before the wound has been dressed; or there has been considerable contusion; or the surface of the wound has been smeared with dirt, or other extraneous substance. In other cases there will be partial adhesions, some parts of the wound becoming united while there is suppuration elsewhere; and (as I shall have occasion to observe hereafter) this state of things requires much attention on the part of the surgeon, lest the formation of abscesses in certain places should do injury to the pericranium and bone, and destroy the adhesions in the neighbourhood.

In those cases also, in which the pericranium is

separated from the bone, it is for the most part right to replace the scalp, with the torn surfaces in contact, and to allow them to have the chance of becoming united, whatever that chance may be. Such union will not unfrequently take place even in the adult, where the bone is not exposed to a great extent, and the parts are nicely adjusted to each other; but there is much more reason to expect it in the young person, on account of the greater vascularity of the harder textures before the period of growth is concluded.

Sect. 10.—*Treatment of Fractures of the Cranium unattended with Depression.*

It seems to be the general opinion of modern surgeons that a fracture of the cranium, where there is no depression, and no evidence of any considerable extravasation between the dura mater and the bone, requires nothing beyond the strict antiphlogistic treatment, which ought to be resorted to in all cases of injury of the head. The fractured surfaces being here in contact are under circumstances the most favourable to the process of union, and the removal of a portion of the bone with the trephine must be regarded as a considerable, and as far as the fracture itself is concerned, a wanton addition to the mischief already inflicted, which, instead of expediting, cannot fail materially to retard the patient's ultimate recovery.

The application of the trephine, under these circumstances, has nevertheless been recommended by Mr. Pott; and I should be guilty of a serious omission if I were to pass over in silence a question of such importance, and relating to a point of practice which has received the sanction of such high surgical authority.

In the perusal of Mr. Pott's treatise on Injuries of the Head, we cannot but feel some degree of astonishment that that eminent surgeon should have resorted to an operation with so little hesitation in a number of cases, in which the existing symptoms were of trifling importance, and in which there was no evidence of immediate danger. It does not appear however that Mr. Pott, on these occasions, acted merely under the influence of his early prejudices, or of the example of those who had gone before him; and although not formally stated in his writings, the following argument may be deduced from them in favour of the practice which he recommended and adopted.

1st. The blow which occasions a fracture of the cranium, is likely to do such further injury to the vessels of the dura mater as may lead to inflammation and suppuration of the external surface of that membrane, and the formation of an abscess between it and the bone.

2dly. If such an abscess be formed without a

free external opening, the case must terminate fatally.

3dly. If immediately after the accident a portion of bone be removed by the trephine, the pus formed afterwards on the surface of the dura mater is enabled to escape, and the danger arising from its confinement beneath the bone is avoided.

But it may be urged in opposition to this doctrine, 1st, That Mr. Pott seems, on the one hand, to have greatly over-estimated the danger of suppuration between the bone and the dura mater in cases of simple fissure of the cranium; and that such mischief will be avoided in the very great majority of cases, provided that, from the moment of the accident, the patient be kept in a state of perfect repose, on a spare diet, with the head cool, blood being taken occasionally from the arm, and these remedies being combined with the use of saline purgatives*.

* Whoever reads Mr. Pott's observations on this subject, and compares them with what is now seen in hospital practice, will, if I am not mistaken, find good reason to believe that suppuration between the dura mater and the bone in consequence of a fracture, is less common at the present period than it was, when Mr. Pott wrote; a difference which may fairly be attributed to the more strict antiphlogistic treatment, which modern surgeons do not fail to adopt in all cases of injury of the head, whether the early symptoms be or be not of a dangerous description.

2dly. That he seems on the other hand to have under-estimated the evils which may arise from the removal of a portion of the cranium, to which in fact no allusion is made in any part of his writings. On this subject it is needless to repeat the observations which I have made in a former part of this paper.

3dly. That even if suppuration should take place between the bone and the dura mater, a watchful surgeon may generally detect the circumstance before pus has been formed to any great extent, and that the patient has still the chance of being preserved by the timely application of the trephine.

We can scarcely hesitate to admit that the reasons for abstaining from the use of the trephine under the circumstances which have been described are more conclusive than those which may be urged in favour of a more active treatment; it being at the same time borne in mind that cases of fracture of the cranium, even without depression, are always to be regarded with a jealous eye, especially where the scalp is wounded and the pericranium separated from the bone, it being in these cases especially that danger exists of the formation of matter between the dura mater and the bone.

Sect. 11.—*Treatment of Wounds of the Brain and its Membranes.*

Although the condition of the patient who labours under a wound of the brain, or dura mater, is essentially different from that of one in whom no such wound exists, the general treatment required in these two orders of cases is nearly similar; and bleeding, purgatives, low diet, and a state of perfect repose form an important part of the remedies to be employed in cases of wounds, as well as in those of concussion and compression of the brain.

The object of the local treatment, where there is a wound of the brain or its membranes, is not so much to relieve the existing symptoms as to prevent future ill consequences, the principal of which are (as I shall shew hereafter), 1st, inflammation extending from the wound over the membranes of the brain, and producing an effusion of serum and pus; 2dly, inflammation, suppuration, sloughing, and dissolution of the substance of the brain; 3dly, protrusion of the brain, in the form of what is commonly denominated a *hernia cerebri.*

A judicious surgeon will always bear in mind, that, especially on these occasions, the first rule of his art is not to add to the mischief already done. If splinters of bone have penetrated into

the brain, and can be removed with perfect facility, and without the smallest additional disturbance to the injured organ, such removal cannot be improper, and may probably be useful. Many persons however have recovered, in whom an opposite practice has been pursued. I saw a gentleman in whom detached fragments of bone remained imbedded in the brain, many months after he had received a wound in the head from a pistol bullet, and who suffered scarcely at all from the injury. Do not such cases justify us in leaving splinters of bone untouched, where there is any kind of obstacle to their easy extraction? Are they not even sufficient to show that any other mode of proceeding would be improper, and that it is better to leave the patient to take his chance with the splinters lodged in the brain, than to commit the smallest additional violence in an endeavour to remove them?

A similar observation may be made respecting depressions of bone when complicated with wound of the brain. If the edge of the depressed bone be imbedded in the substance of the brain, it may be proper to restore it to its natural level, provided that this can be readily accomplished with the forceps or elevator. But individuals have recovered, in whom a depression of bone has been allowed, under these circumstances, to remain without being elevated; and it cannot be advisable to risk this chance of recovery, whatever

it may be, if the elevation requires the application of such a degree of force as is likely to cause the most trifling additional injury to the wounded brain. I have myself been led to doubt the expediency of applying the trephine in those cases in which there were no circumstances making the operation absolutely necessary. The motion of the saw must occasion more or less jar to the tender substance of the brain; and this, which may be of little consequence where the brain and its membranes are entire, may make a serious difference as to the degree of danger, where these parts are already lacerated and contused. There is, moreover, the same objection here as in other instances, to the removal of any considerable portion of the parietes of the cranium, namely, the liability which it occasions to the formation of a *hernia cerebri.*

The lodgement of a musket ball, or other foreign body in the substance of the brain, is undoubtedly a very serious occurrence, and one attended with the greatest danger to the patient. If the foreign body be of such figure and dimensions, and so situated, that while one extremity of it is inclosed within the cavity of the cranium, the other extremity projects externally, it may of course be extracted, and, probably, ought to be extracted at all risks. But with respect to a musket ball or pistol bullet lodged in the brain, it may be

observed, first, that it rarely happens that it can be discovered and extracted even by the lightest and most practised hand, without such a degree of violence as must be in itself sufficient to produce a train of evils, which in all probability would terminate in death: and, secondly, that there are numerous instances of persons who have recovered, although the ball was allowed to remain in the brain; some of whom have suffered no more than they would have suffered from its being lodged in a less important part of the body. Taking all these things into consideration, ought we not to regard it as the general rule, that the extraction of a ball should not be attempted; an exception to the rule being made only in those cases, in which, from its more superficial situation and other circumstances, the extraction can be easily accomplished without the employment of force, and without adding in any degree to the mischief already done?

On the whole (according to the view which I am led to take of the subject), there seems to be in the very great majority of cases of wounded brain, more wisdom in resorting to negative, than to active local treatment. At any rate, as the restorative powers of the animal system are on all occasions the principal agents in the reparation of mechanical injuries, we cannot be wrong wherever there is a reason for doubt as to what

should or should not be done, in leaving nature to take her own course, in trusting to her efforts rather than to human science and art.

My own experience, as far as it goes, is in favour of what is here recommended. I do not mean, however, to assert that what I have seen of cases of wounded brain is in itself sufficient to justify me in forming these conclusions, unaided by a general knowledge of disease, and by arguments derived from analogy. In fact, the cases of wounds of the brain, which occur in the routine of a civil hospital, are so few in number compared with those of other injuries of the head; they exhibit such numerous and various complications; and the proportion of recoveries from such wounds, whatever system is pursued, is so small (especially among adult patients), that it would be bold of any surgeon, engaged in the ordinary duties of his profession, to declare that he had been able to make a comparison of the different modes of treatment on such an extended scale, as would enable him to lay down rules of conduct founded wholly on his own practice and experience. The opportunities of military and naval surgeons must be, at certain periods, more considerable, but the circumstances under which they occur are very unfavourable to that minute observation and accurate judgement, which would be necessary to enable them to derive from their opportunities, all the advantages, which they might

otherwise afford. Where the experience of individuals fails, we are called on to look for other sources of information. I have referred to all the cases of wounded brain recorded in the works quoted below *, and the general results which they exhibit will be found not uninteresting, if viewed in their relation to this point of surgical practice. These cases are thirty-eight in number, of which twenty-six terminated favourably, and twelve unfavourably. This, of course, affords no information as to the actual rate of mortality in cases of this description, the fatal cases being for the most part regarded as too much a matter of course to be worthy of publication, while a very different opinion is entertained respecting the cases of recovery. But the following facts afford some useful information as to the circumstances under which recovery takes place.

In nine cases of wounded brain in which the bone was fractured, but not depressed, no operation whatever was performed. In two of them the patients died; in the remaining seven they recovered.

* Mémoires de l'Académie Royale de Chirurgie.—Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge.—Duncan's Medical Commentaries.—Duncan's Annals of Medicine.—Edinburgh Medical Journal.—Medico-Chirurgical Transactions, Vol. I. to Vol. XII. inclusive.—Le Dran's Observations in Surgery.—Hennen's Military Surgery. — Collection d'Observations Cliniques par M. A. Petit.

In fifteen cases no operation was performed, beyond that of removing some splinters of bone with the forceps. In five of these cases the patients died, while in ten the patients recovered.

In four cases the wound of the brain was complicated not only with fracture, but with depression of bone. In one of them in which the depressed bone was allowed to remain without being elevated, the patient recovered. In the three remaining cases the depression was elevated with the assistance of the trephine; and one of these patients recovered, and two of them died.

In ten cases a musket ball was lodged in the brain. In two of them the ball was extracted, and one patient recovered, while the other died. In the remaining eight cases the ball was allowed to remain, no attempt being made for its extraction, and two of these patients died, while six of them recovered. Of these last, however, one died several weeks afterwards of inflammation of the brain induced by intemperance in drinking, and another, after having been sufficiently well to resume his duties as a soldier, died in the course of the following year, of what was regarded as a *coup de soleil.*

It appears then that in fourteen out of twenty-six patients who recovered, no operation whatever was resorted to, and that in ten of the remaining

twelve, there was no operation beyond that of removing splinters of bone with the forceps. Of those in whom a ball was extracted from the brain one died, and one recovered; and of those in whom the ball was not extracted two died, and six recovered. It is needless to add, that the conclusions to be deduced from these statements illustrate and confirm the observations which have been already made as to the principles which should direct the surgeon in his treatment of these formidable injuries *.

There is one circumstance connected with this subject, which is too important to be passed over in silence, and which may very properly be mentioned in this place, as it must very materially influence us in the opinion which we give, at the time of the accident, as to the probability of the

* Since these calculations were made, a very interesting case has been published by Dr. Rogers in the thirteenth volume of the Medico-Chirurgical Transactions, in which the breech-pin of a gun was lodged in the anterior lobes of the cerebrum, and extracted at the end of twenty-eight days, the patient afterwards recovering. Here the foreign body remained in the substance of the brain until inflammation had been going on for an entire month, so that the brain and its membranes must have become extensively agglutinated and consolidated around it. The question as to the extraction of a foreign body after such a lapse of time, and under such circumstances, belongs more properly to another part of these inquiries; my observation at present being intended to be confined (as nearly as that can be done) to the treatment to be employed immediately or soon after the occurrence of the injury.

patient's recovery. I have not been able to discover, among all the works which I have consulted, a single instance of recovery from a wound of the posterior lobes of the cerebrum, of the cerebellum, or medulla oblongata; and in the great majority of cases in which a cure has taken place the injury has been confined to the frontal bone, and that part of the brain which is covered and defended by it.

SECT. 12.—*On the Treatment of some other Cases which are not included under the foregoing heads.*

In those cases in which a particular class of sensations is destroyed or impaired,—as where deafness, or a loss of smell or taste follows an injury of the head,—I am not aware that advantage is to be expected from any particular mode of treatment, or that the use of any remedies is indicated beyond those which are resorted to in ordinary cases of concussion of the brain. The patient generally recovers the sensations of which the accident had deprived him in the course of one or two years; but his cure is to be attributed not so much to the skill of the surgeon, as to the restorative powers of his own system. All cases however do not prove equally fortunate in the result. I saw a gentleman in consultation with Dr. Francis Hawkins, who had lost his sense of smell in consequence of a blow on the head many years before, and in whom no improvement in this

respect had ever taken place. He was not even sensible of the odour of valerian, although he could distinguish the medicine by the taste.

When a patient is affected with furious and raving delirium, blood should immediately be taken from the arm, and, if possible, in a full stream. I scarcely remember a single case, in which delirium of this kind, occurring soon after a blow on the head, did not yield to a copious blood-letting. The patient may very probably relapse into the same state, as soon as the first effects of the loss of blood have subsided, and it may be necessary to resort to the same means a second or third time, before the relief is permanent.

As there is reason to believe that convulsions and furious delirium occur under nearly parallel circumstances, we may expect that the treatment which is useful in cases of the former description, will also be useful in those of the latter. When convulsions occur soon after the accident, blood-letting is undoubtedly indicated. It is not however always easy, when the patient's limbs are thus moved and agitated, to succeed at once in the operation; and in many cases, the convulsions having been once established, they will continue for a certain period, notwithstanding that a considerable quantity of blood has been taken away, subsiding at last spontaneously. In a few instances (as has been already explained) con-

vulsions occur at the expiration of some days from the time of the injury. At this later period they may exist in combination with inflammatory symptoms, which may require the further use of the lancet. But they may also exist independently of inflammation, being aggravated by any additional abstraction of blood, and subsiding on the patient being allowed to take some more substantial nourishment than that which had been allowed him previously. A case has been related in a former part of this paper, which will serve to illustrate this last observation.

ANALYSIS

OF A SPECIMEN OF

CUTANEOUS PERSPIRATION.

By J. BOSTOCK, M.D. F.R.S.

WITH

AN ACCOUNT OF THE CASE

By RICHARD BRIGHT, M.D. F.R.S.

PHYSICIAN TO GUY'S HOSPITAL.

Read 11th March, 1828.

IN the month of March last, I received from Dr. Bright about four ounces of a fluid, which he informed me was the cutaneous perspiration of a patient, at that time under his care in the wards of Guy's Hospital, and I gladly embraced the opportunity thus afforded me, of examining the properties of a substance, which we are seldom able to procure in so considerable a quantity.

It was of a dingy brown colour, was somewhat opake, without odour, and did not appear to be either viscid or tenacious: its specific gravity was 1·0117; it was very slightly alkaline. After standing at rest for twenty-four hours, it began to deposit a flocculent precipitate, which appeared to consist

principally of fibres of wool or cotton; derived, as we may presume, from the clothes or bedding on which the perspiration had been deposited; after the separation of this substance the fluid was left nearly transparent, although the colour was not much changed: 500 grains of the fluid were exposed to the atmosphere in a shallow capsule; it underwent no perceptible change for several days, but at length the colour became deeper, and a small quantity of a brown matter adhered to the sides of the glass; at the same time it had acquired a slightly putrid odour. As the evaporation continued, a mass of crystals was gradually formed, which in the centre were well defined cubes, nearly without colour, surrounded by an imperfectly crystallized margin, mixed with a portion of extraneous matter. The capsule was then kept for some time at a temperature of 200°; the residuum, when completely dried, amounted to 8·4 grains, indicating very nearly 1·7 per cent. of solid contents in the fluid. A second portion of the fluid, without previous exposure to the atmosphere, was evaporated at a temperature of 200°, until it appeared to be completely dried, when the amount of the residuum was found to be 1·32 per cent.

Portions of the fluid of two drachms each were subjected to the following re-agents:—1. No change was produced in the appearance of the fluid by exposing it to the heat of boiling water; 2. the solution of bichloride of mercury produced a slight

opacity, and when the mixture was heated, a very small quantity of a dense precipitate was thrown down; 3. the ferro-prussiate of potash produced no effect until heat was applied, when the fluid became opake, and a very small quantity of a flocculent precipitate gradually subsided; 4. a more dense precipitate was thrown down by the oxalate of ammonia; 5. a minute precipitate was thrown down by the muriate of barytes; 6. a very copious precipitate by the nitrate of silver; and, 7. a precipitate, which appeared still more copious, by the sub-acetate of lead. From these results we may conclude, that the substance contained in this fluid was principally muriate of soda, with a portion of uncombined or carbonated alkali, a small quantity of a salt of lime, a still smaller quantity of a sulphate, together with some animal matter, of which a very small portion may be regarded as a species or modification of albumen.

In order to ascertain the proportion of the saline to the animal matter, the residuum obtained by evaporation was strongly heated in a small platina vessel, until the combustible matter was gradually carbonized, and at length consumed. By this means the weight of the residuum was diminished in the proportion of 24·9 per cent.; hence we may conclude, that the saline and animal matter existed in the fluid in the respective proportions of 1·37 and ·46 per cent.

With respect to the nature and composition of the saline matter, both the action of re-agents and the appearance of the crystals indicated that it existed almost entirely of muriate of soda with a small quantity of an uncombined alkali. That this alkali originally existed in the fluid in the uncombined state, I concluded from there not being the slightest perceptible effervescence upon the addition of an acid. The usual tests, as well as the aspect of the crystals, indicated that this alkali was soda, or at least, that if any potash were present, it was in the most minute quantity only*. For the purpose of ascertaining the respective proportions of soda and the muriate of soda, two methods were employed. The first consisted in neutralizing a portion of the saline solution with acetic acid, the strength of the acid having been previously ascertained by the quantity of crystallized sub-carbonate of soda which was required to saturate a known weight of it, and estimating the quantity of soda by the quantity of acid necessary for saturation†. The second method, probably the most

* The substance that was employed to detect the presence of potash was tartaric acid. I found by a direct experiment, that when a solution of tartaric acid is added to an equal volume of a solution containing $\frac{1}{100}$ of its weight of bi-carbonate of potash, which is nearly equivalent to $\frac{1}{1000}$ of potash, very distinct crystals of bi-tartrate of potash are formed.

† I found that by employing an acetic acid of the specific gravity of 1019, it was easy to ascertain, with great accuracy, the quantity of the acid necessary for the neutralization of a

accurate, but by far the most operose, was by ascertaining the quantity of muriate of silver, formed by adding nitrate of silver to a quantity of the saline solution*. By these means I found that the uncombined soda amounted to about one-twelfth of the residual mass, which will be ·114 per cent. of the entire fluid. The quantity of the phosphates and sulphates, either as indicated by the appearance of the crystals, or by the effect of the tests that were employed to detect their presence, would appear to be very minute. From the above experi-

fluid, which contained no more than $\frac{1}{300}$ of its weight of crystallized sub-carbonate of soda, equivalent to about $\frac{1}{3300}$ of pure soda. It is necessary, towards the end of the experiment, to suffer some time to elapse between the addition of each minute portion of the acid, to admit of its diffusion through the fluid, and of the escape of the carbonic acid. The test papers that I employed were litmus and litmus reddened by acetic acid.

* The method usually employed for measuring the quantity of muriatic in a fluid, by the intervention of the nitrate of silver, is to collect and dry the resulting precipitate of muriate of silver. But I believe it will be found, that a very much easier, and an equally correct mode is to ascertain the quantity of nitrate of silver, which is necessary to combine with the muriatic acid in the fluid under examination, having previously learned, by direct experiment, what quantity of the nitrate of silver that was employed is requisite to decompose a given quantity of dried muriate of soda. I found that it required 26·5 grains of my nitrate of silver to decompose 1 grain of muriate of soda dissolved in 50 grains of water. Hence it will appear, that by adding the nitrate of silver drop by drop, so as to observe the effect of each portion as it mixes with the fluid, we may ascertain the quantity of the muriates in a solution with great precision.

ments we may conclude the composition of the fluid to be as follows:—

Water	981·7
Animal Matter	4·6
Muriate of Soda	12·56
Soda	1·14
Phosphates and Sulphates, a trace	
	1000·00

The next point was to ascertain the nature of the animal matter; for this purpose a portion of the entire fluid was slowly evaporated nearly to dryness, when a number of distinctly formed cubical crystals were formed, which were carefully removed, and the remainder was then completely evaporated, and heated until it indicated the commencement of the process of carbonization. The residuum was then digested for some time in tepid water, by which it appeared that very nearly all the saline matter was removed, and the residuum being then exposed for a short time to a temperature of 200°, I obtained a brown viscid mass, which had an acrid taste, and an odour, which I thought bore a considerable resemblance to that of urea, after it has been strongly heated. The addition of nitric acid to the residuum produced an appearance, which might be conceived to depend upon a tendency to crystallization, but I

could not pronounce it to be similar to the pearly scales of the nitrate of urea. The brown colour of the residuum was changed by the nitric acid to a bright yellow, but no further change of colour took place by saturating the nitric acid with ammonia. The residuum was disposed to deliquesce by exposure to the atmosphere.

A portion of the residuum was digested with alcohol at a temperature of 150°. The alcohol acquired a brown tinge and became slightly opake, but a considerable part of the substance seemed to be insoluble. The alcohol was evaporated; and a brown viscid residuum was obtained, which both in its sensible properties, and in the result of the action of nitric acid upon it, manifested a certain degree of resemblance to urea, and may be characterized as intermediate between this principle and osmazome, or perhaps a combination of the two. The proportion which it bore to the part insoluble in alcohol was nearly as one to four, or more exactly as twenty-eight to one hundred. The part insoluble in alcohol, in its sensible and chemical properties, seemed to approach the most nearly to the substance which forms the principal ingredient of the serosity of the blood. Besides these, the fluid, in its entire state, contained a very small quantity, which was scarcely appreciable, of albumen, but it gave no indication of the presence of jelly.

Upon comparing the above analysis with the account that is given us of the composition of the serum by Marcet and Berzelius*, we find that the fluid of perspiration, in this case, differed from the serum of the blood, in the smaller proportion of the solid contents generally, and especially in the almost total absence of albumen; while it agrees with it in containing a considerable quantity of muriate of soda, a portion of uncombined soda, and a quantity of animal matter, which is similar to that contained in serosity. Notwithstanding the absence of albumen, it must therefore be considered as essentially belonging to the class of serous fluids, such as contain the same kind of salts with those in the blood, along with the peculiar animal matter in the serosity, and nearly in the same proportion as in this fluid, generally combined with a quantity of albumen. This last ingredient however varies in its quantity, from one-ninth of the weight of the whole, as is sometimes the case in the serum, to the gradually decreasing quantity which is found in the fluid of ascites, of the spina bifida, or of hydrocephalus, of which it occasionally constitutes no more than one-hundredth part, until we arrive at the substance now under examination, where the albumen is barely discoverable by the most delicate tests.

* Med. Chir. Trans. Vol. II. pp. 370, 1., and Vol. III. p. 230.

The account which I have given of this fluid may be considered as agreeing essentially with those of M. Thenard* and Professor Berzelius†, except in one particular, that they both of them found the cutaneous perspiration to contain an uncombined acid. I should feel much distrust in any experiments of my own, which were in opposition to those of chemists of so much eminence, were it not that the point in question is one on which it was impossible that I could be mistaken, while, at the same time, I had the accidental advantage of operating on so large a quantity of the fluid. It is, however, by no means improbable, that the cutaneous perspiration may differ in the nature of its ingredients according to the state of the system, a circumstance which takes place in a remarkable degree with respect to the urine, a fluid to which the cutaneous perspiration bears some analogy, and with which it possesses some well known physiological relations.

I have obtained from Dr. Bright the following account of the symptoms of the patient from whom the fluid was procured.

J. Bostock.

Upper Bedford Place,
Feb. 16, 1828.

* Chimie, Tom. III. p. 712.

† Med. Chir. Trans. Vol. III. pp. 256, 7; see also my Physiol. Vol. II. pp. 333, 4.

" MY DEAR SIR,

" You have expressed a wish to learn some particulars respecting the case of the patient, from whom I procured the specimen of perspired fluid which I sent to you early in March 1827. He was at that time under my care in the Clinical Ward of Guy's Hospital; but as he had been transferred to me with the ward, I had not conducted the treatment from the commencement. I had however frequently seen him, and think it necessary to make what statements I am able respecting the previous history and progress of his ailments, in order that you may better understand his condition at the time I collected the fluid.

" Robert Healas, a sailor, aged 64, had been admitted into the Clinical Ward of Guy's Hospital, Jan. 3, 1827, under the care of Dr. Cholmeley. He was a robust man, who had enjoyed good health, but stated that he had formerly suffered some attacks of gravel. Having slept in damp sheets about six days before admission, he was seized with shivering, eructation, hiccup, and vomiting, and most violent pain in the abdomen, which continued more or less urgent up to the time when he was admitted into Guy's, and the symptoms were attended with a constipated state of the bowels. He had been previously bled without relief, and taken purgative medicine which had failed of producing stools. There was tenderness on pressure of the abdomen; a yellow furred

tongue; pulse eighty-four, with considerable action. He was bled, put into the warm bath, had three grains of calomel, and half a grain of opium every four hours, and injections with castor oil were administered frequently.

"The blood was slightly buffed; the bath produced no perspiration. Copious feculent dejections were procured during the two following days, and on the 9th, six days after admission, he was considered convalescent; but it was observed about this time that his stools had become of a light colour and were apparently deficient in bile, and he complained of occasional griping pains. On the following day it was remarked that the urine was unusually pale; and on the 12th it appeared that the quantity of urine was unnaturally increased; and his legs became somewhat œdematous towards the evenings; his bowels were very freely opened, but the stools were still of a very light colour. It was about this time that he came under my care.

"On the 14th he complained of pain round the umbilicus and over the pubes, particularly when passing water or on pressure; and the urine voided in twelve hours was found to amount to ten pints.

"On the 16th the urine did not coagulate by the application of heat, nor had it any sweetness of taste; but as it continued very abundant, I had

him weighed, intending to see whether he lost weight from the unusual flow of urine. Attention was paid to his bowels, and different forms of mercurial alteratives were administered, the stools still continuing of an unnaturally pale colour.

"On the 26th, in consequence of his having suffered severe pain in the abdomen and epigastrium, he was cupped on the pit of the stomach, and was bled at the arm on the following day; and some dysenteric symptoms having shewn themselves, he was put on the use of ipecacuanha with the hydrargyrum cum creta.

"On the 2d of Feb. he was cupped on the loins to sixteen ounces in consequence of the great irritation going on in the urinary organs, leading to frequent calls to pass his water, so that he was disturbed every twenty minutes during the night. The condition of the stools improved as his mouth became gradually affected by the mercurial preparation, but it was continued till the 20th of Feb. In the mean time the urine still remained very inordinate in quantity, seldom less than eight or ten pints in twenty-four hours. He was on the 14th of Feb. ordered to go to the warm bath twice in the week. This produced the most profuse perspiration I ever witnessed; the perspiration running completely through the bedding and forming streams upon the floor. It was on an occasion of this kind that I collected, as it fell to the ground, in a clean

glass, the fluid I sent to you. In spite of the profuse perspiration he gained weight, and the urine gradually diminished in quantity. He left the hospital on the 13th of March, still passing about six pints of urine in twenty-four hours, but well in other respects. He immediately resumed his occupations, and I heard a few days ago that he continued perfectly well.

"Yours very faithfully,

"RICHARD BRIGHT."

"14, Bloomsbury Square,
"Feb. 9, 1828."

OF

THE CATARRHUS ÆSTIVUS,

OR

SUMMER CATARRH.

By J. BOSTOCK, M.D. F.R.S. Etc.

Read 22d April, 1828.

IN the tenth volume of the Society's Transactions there is an account of a disease which I conceive to be of a specific nature, and which from its symptoms, and from its occurring only at a certain period of the year, I propose to name the catarrhus æstivus. In my former communication, I detailed the symptoms as they occurred in my own person; my present object is to extend my remarks to the affection as it occurs in other individuals, to inquire into its cause, and to make some observations on the mode of treatment.

The number of cases which I have either seen or of which I have received a distinct account, amounts to eighteen, besides about ten others, which are less correctly ascertained. They all agree in the complaint making its appearance at the same season of the year, in its seat being the

membrane lining the nose, the fauces, and the vesicles of the lungs, and, for the most part, in the paroxysms being excited and the symptoms aggravated by the same causes.

One of the most remarkable circumstances respecting this complaint is its not having been noticed as a specific affection, until within the last ten or twelve years. Except a single observation of Heberden's*, I have not met with any thing that can be supposed to refer to it in any author, ancient or modern. I have at various times stated the particulars of my case to some of the most eminent physicians in London, Edinburgh, and Liverpool, and have very gratefully to acknowledge their kindest sympathy and attention; but, until very lately, it was always considered by them as an anomalous train of symptoms, and no one appeared to have witnessed any occurrence of a similar kind, and the same sentiment I recollect to have prevailed in this Society nine years ago, on the reading of my former paper. The first intimation which I received of a contrary opinion, was from the late Dr. Baillie, who, in the summer of 1822, related to me three cases which he considered as similar to my own. Yet, as there ap-

* "I have known it (catarrh) return in four or five persons annually in the months of April, May, June, or July, and last a month, with great violence." This passage was pointed out to me by Dr. M. Hall: I am also indebted to Dr. Hall for the account of a well-marked case of the catarrhus æstivus.

pears to be nothing, either in the cause or nature of the complaint, which can induce us to suppose that it is actually a new disease, we are obliged to conclude that it had been regarded as a mere modification of the common catarrh.

The twenty-eight cases referred to above, all agree in the complaint commencing about the end of May or the beginning of June, and continuing from four to eight weeks. Most of them are attended with fulness of the head, stoppage of the nose, sneezing, watering of the eyes, and discharge from the nostrils. In about half of the whole number the respiration is considerably affected, and in three or four instances it is almost the only symptom. Some of the cases are attended with distinct cough, most of them with irritation of the fauces, and some with a degree of sore throat. Actual inflammation of the eyes is not a very common occurrence, and in some of the cases there is not even the discharge of tears, or the irritation of the eyes. The degree of general indisposition varies very much in the different cases; in some, the patient, during the whole period, is unable to use any exertion, or to continue his ordinary occupations, while, in other instances, he feels no inconvenience, except what arises from the fits of sneezing, and the copious discharge from the nose.

I have not been able to trace any decided con-

nexion between the peculiar symptoms and any circumstance of age, sex, constitution, or mode of life in the patient. For the most part, indeed, I have found, that in very young persons, the first symptoms that are observed are sneezing and running of the eyes, that the chest is not affected until a later period of life, and that, as age advances, the purely catarrhal symptoms decrease, while the pectoral symptoms have a tendency to increase. With respect to age, I have no account of the complaint commencing earlier than it did in myself, at about eight years, nor have I heard of any very old persons being affected with it; for the most part, however, it seems rather to increase with the advance of life than the contrary, and I have no account of any one who has been once affected by it, ever afterwards losing the tendency. It is remarkable, that all the cases are in the middle or upper classes of society, some indeed of high rank. I have made inquiry at the various dispensaries in London and elsewhere, and I have not heard of a single unequivocal case occurring among the poor. A considerable majority of the cases are males, but I have an account of some females, who suffer severely from the complaint. There is no decided evidence of the complaint being hereditary, except that there is an instance where three members of the same family are affected by it.

I have not been able to ascertain with any

great degree of precision, whether any specific temperament is peculiarly subject to it. Those cases that have fallen under my own inspection have been generally of a spare habit and liable to stomach affections, but I have met with exceptions to this rule. It does not appear to be confined to any particular situation; it occurs alike in towns and in the country, and I have not heard of any districts, the inhabitants of which are peculiarly subject to it.

The immediate cause of the symptoms seems to be sufficiently obvious; it consists in an increased action of the vessels of the membrane which lines the eye-lids, the nose, the fauces, and the pulmonary vesicles, by which it becomes acutely sensible to external impressions, has its natural secretions augmented, and probably its bulk increased; to this last cause I think we may ascribe the very distressing sense of dyspnœa which exists in some of the cases. Although this membrane is continued without interruption over the different organs that are the seat of the affection, yet it is observed that the different parts are affected in different degrees. Hence we may divide the disease into four varieties, according as the eyes, the nose, the fauces, or the lungs is the part more immediately affected. It is in the last variety only, that I have observed the constitutional symptoms of fever and the subsequent debility to exist in any considerable degree; and in this case I think we may account for the effect, by supposing

that the thickened state of the membrane which lines the vesicles, prevents the oxygen of the inspired air from duly acting on the blood.

With respect to what is termed the exciting cause of the disease, since the attention of the public has been turned to the subject, an idea has very generally prevailed, that it is produced by the effluvium from new hay, and it has hence obtained the popular name of the hay-fever. As it is extremely important to ascertain the truth of this opinion, I have made it the subject of distinct observation, as far as regards my own person, and by minutely attending to the accession of the symptoms, for a number of successive seasons, in relation to this supposed cause, I think myself fully warranted in asserting, that in my own case the effluvium from hay has no connection with the disease. The following observations will, I think, be sufficient to prove this position.

In consequence of the benefit which I always experienced from fresh cool air, I made choice of Ramsgate as my residence during the summers of 1824, 1825, and 1826. The last two of these years will be long remembered for their excessive heat; but by procuring a house on the cliff, exposed to the German ocean, and commanding complete ventilation, by avoiding bodily exercise, and indeed seldom leaving the house until evening, during the year 1825 I nearly escaped the disease. In the year 1826, I have reason to be-

lieve that the disease was much mitigated by the comparative coolness of the situation, but still I had many decided and some severe paroxysms. Now it is well known, that there is not an acre of meadow ground in the whole of the Isle of Thanet, and in the year 1826, in consequence of the great drought, all the little patches of grass, which may be supposed to exist on road sides or elsewhere, were completely burnt up. Nor is this all; during many of the hottest days, the wind blew steadily from the south-east, so that the nearest land to windward of the house which I occupied, was on the French coast, a little to the north of Calais. Yet during this time, whenever I relaxed from my plan of discipline, and exposed myself to the sun's rays, or by any means quickened the circulation, the symptoms recurred in full force.

The last year, 1827, with the exception of a short period in July, was cold. I could not conveniently remove to any great distance from London, and I spent the summer at Kew. This situation might have been chosen for the purpose of the experiment, for almost the whole of that part of the country consists of hay-grass, which was cut while I was in the neighbourhood. In consequence of the coolness of the season I did not confine myself to the house, but walked out daily, occasionally in the Kew gardens, and was surrounded by many hundred acres of hay-grass in all its different states, yet except during

the few hot days, when I suffered as usual, my complaint was in a much less degree than the average.

But although I think the evidence, as far as respects myself, to be quite decisive, I acknowledge that I have received accounts from various quarters, of individuals, who have felt no doubt that the complaint was brought on by the effluvium from hay, and was relieved or prevented by avoiding this effluvium. I will not venture to assert that this opinion is incorrect, but I believe that in most cases we may explain the facts more naturally by supposing, that the patients, at the time when they conceived themselves to be inhaling the effluvium from hay, were also exposed to heated air or sunshine, or had been using bodily exercise. Experience, however, must decide the question, and when the subject is once fairly brought into view, it will not be difficult to collect a sufficient number of facts to enable us to form our opinion.

With respect to the cure or mitigation of the complaint, I regret to say, that except in so far as we are able to avoid those circumstances which bring on the paroxysm, I have been able to obtain very little satisfactory evidence. Most of the patients have tried a change of residence, some from town to country, others from country to town, and some have removed to various parts of the island, or even to the continent. In two cases

of considerable severity, the patients have felt convinced that they were better in London than in the country ; in another case the patient conceived that he derived great advantage from exposure to sea air, but, in other instances, similar trials have not proved successful.

As far as regards medical treatment, an anxious desire to obtain relief from an annual indisposition of several weeks' continuance, and sometimes of considerable severity, has induced me to try, with the greatest perseverance, every remedy which held out the least prospect of advantage. I think myself warranted in asserting, that, on the whole, the depleting system is injurious, and that some benefit is gained by a moderate use of tonics. This is the only point in which the various accounts that I have received from others and my own experience appear to agree, and in general it would seem that the symptoms proceed nearly in the same way under very opposite plans of treatment, and are very little influenced by medicines of any description.

The experience of many years has taught me not to expect a cure for the complaint, so that I now only aim at relieving any peculiarly urgent or distressing symptom. Bathing the eyes in tepid water, and fomenting the face generally, occasionally applying small blisters to the chest, mild purgatives, small doses of ipecacuanha, Dover's

powder, squills, and digitalis, bathing the feet in warm water, a moderate but not spare diet, perfect rest, and carefully avoiding all extremes of heat, comprise the whole of the means that I have found useful to myself. In order to prevent others from making useless experiments, I may remark that among those things which I have tried without success are bark, iron, opium, mercury, large blisters, topical bleeding, the waters of Harrowgate and Leamington, the baths of Bath and Buxton, sea-bathing, the shower bath, abstinence from wine and animal food, and a more free use of them; each of these having been made, as it may be said, the subject of distinct experiment, and persevered in, until some circumstance rendered it necessary to discontinue them, or until they produced a decidedly injurious effect.

While this paper was in the press, I was informed by a friend, on whose accuracy I could place implicit confidence, that great relief had been experienced in two cases of the complaint, by applying to the eyes and nostrils a very weak infusion of tincture of opium, in the proportion of one or two drops of the tincture to an ounce of water. I regret to say, that in the trial which I have hitherto made, it does not appear to produce the same beneficial effect on my symptoms.

Upper Bedford Place,
June 9th, 1828.

CASE

OF

RUPTURE OF THE STOMACH

PRODUCED BY VOMITING;

WITH SOME OBSERVATIONS,

By J. N. WEEKES, Esq.

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, AND HOUSE-SURGEON AT ST. BARTHOLOMEW'S HOSPITAL.

Read 27th May, 1828.

THE following case of rupture of the stomach, accompanied with some unusual circumstances, having lately fallen under my observation, I have thought it may not be unworthy of the attention of this Society.

George Andover, æt. 34, had been liable for about two years to paroxysms of pain in the stomach. The pain usually continued for several hours, and generally went off with vomiting, and it returned at uncertain intervals, frequently of many weeks. Between the attacks the patient enjoyed tolerably good health. About Christmas last he vomited a large quantity of blood, which

rendered him so feeble, that he was confined to his bed for five weeks. Since that time, his health has been much impaired, and the attacks of pain followed by vomiting have been more frequent.

On the evening of April 19th, he was brought to St. Bartholomew's Hospital, where I first saw him. He was then suffering great pain, extending from the epigastric region over the whole abdomen, and accompanied by nausea; there was neither tenderness nor tension of the abdomen,—the pulse was frequent, tongue clean. He had shortly before his admission drunk some shrub and water, to which he in great measure attributed these symptoms, and told me he had had a similar attack a week ago, after indulging in spirituous liquors, and that it went off with vomiting. On the following day the pain had subsided, there had been no vomiting, but he complained of nausea; the abdomen was distended by flatus, and he had frequent eructations,—the pulse was weak, tongue natural.

At eleven o'clock, p. m. he had a sudden attack of most severe pain. I was called to him about an hour afterwards, and found him groaning with agony at the pit of the stomach,—the abdominal muscles were hard and contracted,—the belly was neither painful nor tender on pressure,—his pulse was small and feeble,—he was extremely restless, and his countenance expressive of the greatest suffering. I instantly gave him sixty drops of

tincture of opium, and as he found no relief they were repeated, but without benefit. He continued to suffer most acute pain for about two hours, when he was suddenly seized with violent vomiting. After this the pain somewhat abated; there was no return of vomiting,—but he sunk rapidly, and died at four o'clock in the morning.

Examination.—On opening the abdomen, the stomach was observed to be flaccid and empty, and its contents, which consisted of a large quantity of dark-brown fluid, were effused into the peritoneal cavity, through a ragged opening situated on its anterior surface, and near the œsophageal orifice. The rupture extended from below the lesser arch of the stomach to near its cardiac extremity, and was about four inches in length. The three membranes were not torn equally, the rupture of the peritoneal extending an inch farther than that of the muscular or mucous coat. On the posterior surface of the stomach was a laceration, measuring three inches in length; and there were two or three small ones, from an inch to an inch and a half in length, at its great arch. These lacerations extended only through the peritoneal coat of the stomach, the muscular and mucous tunics remaining perfectly whole. The mucous membrane of the stomach was lined with a great deal of dark-coloured secretion, beneath which the membrane itself was of a deep red colour throughout,—its texture was softened and partially em-

physematous. The stomach in other respects appeared healthy,—the liver was pale and softened,—the gall-bladder contained a calculus,—the structure of the spleen was unusually soft,—the other viscera were healthy.

In the eighth volume of the Society's Transactions, Dr. Crampton and Mr. Travers have described some cases of rupture of the stomach; in all these cases there had been ulceration of the coats of the stomach at the part which had given way.

Dr. Abercrombie, in an interesting paper in the Edinburgh Medical and Surgical Journal, 1824, has published some cases of this kind. Many of these cases differed in their previous history, but presented similar symptoms in the fatal attack. In some there had been occasional vomiting, gradual wasting and other symptoms indicating serious disease of the stomach; but in others the symptoms were slight and obscure, and the health was not obviously impaired. The fatal symptoms commenced with a sudden attack of most violent pain, referred to the epigastric region, and extending over the abdomen; sometimes, though not invariably, accompanied by vomiting. The abdomen was in some cases hard and contracted, in others distended and tender. The pain continued unabated, with rapid sinking of the vital powers, and death took place in a few hours.

The stomach was found penetrated by ulcerations of various extent, articles of food and drink were found in the abdomen, and in some cases peritoneal inflammation had supervened. The stomach generally presented marks of long standing disease, as induration and thickening of its coats, adhesion to the neighbouring parts, and organic disease at the part which had given way.

The most remarkable feature in the preceding case, is the extensive rupture of the stomach, with so little disease of its coats; and in this respect it forms a striking difference to those cases hitherto related. The stomach presented no thickening nor ulceration at the part which was ruptured; the disease was confined to its mucous tunic, and appeared to be recent inflammation and softening of its texture. It may also be remarked, that the symptoms in this case were not such as generally indicate the existence of organic disease; there were considerable intermissions of the symptoms, the patient had enjoyed tolerably good health, and there was no emaciation.

In the lacerations of the peritoneal coat of the stomach, without including the other tunics, this case forms a striking resemblance to some appearances which the uterus presented, in a case of sudden death during parturition, described by Mr. C. M. Clarke, in the third volume of the Transactions of a Society for the Improvement of

Medical and Chirurgical Knowledge. "In the fold of the peritoneum, which dips down into the pelvis between the uterus and the rectum, I observed about an ounce of blood; and upon that part of the peritoneum which covers the posterior surface of the uterus, there were between forty and fifty transverse lacerations, none of which were in depth above one-twentieth of an inch, and many were merely fissures in the membrane itself. They varied much in length, some measuring one inch, some two inches, whilst the length of others did not exceed the fourth part of an inch. The space upon which they were situated, extended from one side of the uterus to the other, and occupied the greater part of its whole posterior surface. The edges of these lacerations were thinly covered with flakes of coagulated blood, and there could be no doubt that the blood found in the fold of the peritoneum, had escaped from the lacerations. The muscular part of the uterus was perfectly whole."

The only case I have met with of rupture of the coats of the stomach produced by an act of vomiting, or rather, attempting to vomit, is recorded by Lallemand, and is described in the forty-ninth volume of the Dictionnaire des Sciences Médicales, Art. Rupture.

The patient had laboured under difficult digestion for five or six months, and had been much

relieved by observing a strict regimen. After indulging her appetite to a greater extent than usual, she was attacked with uneasy feelings in the stomach, accompanied by nausea and inclination to vomit. She made violent but ineffectual efforts to discharge the contents of the stomach, and whilst suffering great agony, experienced intense pain, with a sense of tearing at the lower part of the belly; she uttered several screams, and fell down insensible. She sunk rapidly, and died in the night. On dissection, the cavity of the peritoneum was found full of half-digested food; the anterior and middle part of the stomach was torn obliquely from its small towards its great curvature, to the extent of five inches. The edges of the rupture were thin, irregular, and presented no marks of disease. The three coats of the stomach were not torn to an equal extent, nor exactly in the same direction; the rupture of the peritoneal was larger than the muscular coat, and the mucous membrane was the least extensively lacerated. A mass of scirrhus, an inch and a half in extent, surrounded the pylorus. The other parts of the stomach were perfectly healthy.

DONATIONS

TO THE

MEDICAL AND CHIRURGICAL SOCIETY.

Donors.	*Donations.*
Dr. Jaequemyns.	Description d'un Nouvel Instrument nommé Passe-Mèche, servant à établir le Séton. Par I. Jaequemyns, D.M. et C. 12mo. Roulers, 1827.
——	Nouwkeurige Beschowing van de Koey-Pokskens; opgesteld door I. Jaequemyns. 8vo. Gend, 1809.
Dr. Hall.	Commentaries on some of the more important Diseases of Females, in three Parts. By Marshall Hall, M.D. 8vo. London, 1827.
Mr. Tyrrell.	The Lectures of Sir Astley Cooper, Bart. F.R.S. on the Principles and Practice of Surgery. With additional Notes and Cases, by Frederick Tyrrell, Esq. Vol. 3. 8vo. London, 1827.
Mr. Coulson.	A Manual of Comparative Anatomy, translated from the German of J. F. Blumenbach. With additional Notes by W. Lawrence, Esq. F.R.S. 2d Ed. revised and augmented by W. Coulson, Esq. 8vo. London, 1827.

Donors.	*Donations.*
Mr. Cross.	Two Letters shewing the Impropriety of electing Assistant-Surgeons, respectfully addressed to the Governors of the Norfolk and Norwich Hospital. By John Cross, one of the Surgeons to the Hospital. 8vo. Norwich, 1827.
——	Memoria Seconda sopra il Metodo di estrarre la Pietra dalla Vescica Orinaria per la via dell' Intestino Retto. Di A. Vaccà Berlinghieri. 8vo. Pisa, 1823.
——	Ueber den Steinschnitt durch den Mastdarm nach Sanson und Vaccà Berlinghieri. Aus dem Französischen übersetst und mit einigen Anmerkungenversehen von Dr. Ludwig Cerutti. 12mo. Leipzig, 1822.
——	Sull' Ernia Diaframmatica Memoria di Alfonso Domenico Bignardi, Professore di Notomia Umana nella Regia Università di Modena. 4to. Modena, 1827.
Dr. Bostock.	An Elementary System of Physiology. By John Bostock, M.D. F.R.S. Vol. 3. 8vo. London. 1827.
Dr. Clendinning.	Traité d'Anatomie Vétérinaire; Par I. Girard. 2de Edition, revue et corrigée, 2 Volumes, 8vo. Paris, 1819.
——	Traité des Hémorrhagies, par I. Lordat, M.D. 8vo. Paris, 1808.
——	Recherches pour servir à l'Histoire critique et apologétique de la Fièvre. Par A. C. Fages. 8vo. Montpellier, 1820.

Donors.	*Donations.*
Dr. Clendinning.	De Præstantia Institutionum Medico-Practicarum Ill. Jo. Bapt. Burserii de-Kanilfeld, ac de methodo eas exarandi neotericorum consiliis et observationibus Commentariolum ab Eq. Val. A. Brera, M.D. 8vo. Patavii, 1823.
——	Prospetto degli Studj dell' Imperiale R. Università di Padova per l'Anno Scolastico 1823-24. 4to. Padova, 1823.
——	Theses Edinburgenses. Vol. 1. 8vo.
——	Précis Historique des Faits relatifs au Magnétisme Animal jusques en Avril 1781. Par M. Mesmer, D.M. Ouvrage traduit de l'Allemand. 8vo. Londres, 1781.
——	Mémoire sur le Péricardite d' après les Observations recueillies à l'Hôpital de la Charité. Par M. Louis, D.M. 8vo. Paris, 1826.
——	De l'Irritation Encéphalique des Enfans. Par P. A. Piorry. D.M. 8vo. Paris, 1823.
——	Du Froid, et de son application dans les Maladies. Par S. Tanchou, D.M.P. 8vo. Paris, 1824.
Mr. Coulson.	Pharmacopée Française, ou Code des Médicamens, Nouvelle Traduction du Codex Medicamentarius sive Pharmacopœia Gallica; par F. S. Ratier, D.M.P. Augmentée de Notes, &c. par O. Henry, fils. 8vo. Paris, 1827.

Donors.	*Donations.*
Mr. Coulson.	Litterarische Annalen der gesammten Heilkunde. In Verbindung mit mehreren Gelehrten herausgegeben von Dr. Justus Friederich Carl Hecker. 3 Bände 8vo. Berlin, 1825.
——	Nouvelle Bibliothèque Médicale par une réunion de Professeurs. 4 Volumes, 8vo. Paris, 1826.
Mr. Underwood.	The Aphorisms of Hippocrates in the original Greek; with an Analytical Translation on the Principles of the Hamiltonian System, accompanied by a free Version in English; adapted for Students in Medicine. By J. W. Underwood. 8vo. London, 1828.
Dr. Monro.	The Morbid Anatomy of the Brain. Vol. 1. Hydrocephalus. By A. Monro, M.D. 8vo. Edinburgh, 1827.
Mr. Highley.	The Glasgow Medical Journal; edited by William Mackenzie, Andersonian Professor of Anatomy and Surgery. No. 1. 8vo. Glasgow, 1828.
Dr. Horner.	Inquiries into the healthy and diseased Appearances of the Mucous Membrane of the Stomach and Intestines. By W. E. Horner, M.D. 8vo. 1827.
Dr. Bree.	Oratio Harveiana, secunda ex ædibus restauratis Collegii, habita Junii 25, 1827, a Roberto Bree, M.D. 4to. Londini, 1828.

Donors.	*Donations.*
Mr. Buchannan.	Physiological Illustrations of the Organ of Hearing, more particularly of the Secretion of Cerumen, and its Effects in rendering Auditory Perception accurate and acute. By T. Buchannan, C.M. 8vo. London, 1828.
Dr. Kennedy.	Notes on the Epidemic Cholera. By R. H. Kennedy, M.D. Surgeon Bombay Presidency. 8vo. Calcutta, 1827.
Dr. Burne.	A Practical Treatise on Typhus or Adynamic Fever. By John Burne, M.D. 8vo. London, 1828.
Dr. Elliotson.	De la Necessité d' Etudier une nouvelle Doctrine avant de la Juger; et l'Application de ce Principe à la Physiologie Intellectuelle. Par M. le Dr. Fossati. 8vo. Paris, 1827.
Mr. Hutchison.	Practical Observations in Surgery; more particularly as regards the Naval and Military Service. 2d Ed. By Al. C. Hutchison. 8vo. London, 1826.
The Editors.	The American Medical Recorder, No. 1 of Vol 13, Jan. 1828. Conducted by James Webster, M.D.; C. B. Matthews, M.D.; and J. Remington, M.D. 8vo. Philad. 1828.
Dr. Clark.	Saggio dell' Istituto Clinico Romano di Medicina Esterna, esposto da Giuseppe Sisco. Anni 3—9. 4to. Roma, 1819—24.
——	Memoria su di un' Operazione di Litotomia degna di particolare considerazione: da Antonio Trasmondi. 4to. Roma, 1822.

Donors.	*Donations.*
Dr. Clark.	Dei Contagi Spontanei e delle Potenze e Mutazioni Morbose credute atte a produrli ne' Corpi Umani. 4to. Roma, 1820.
——	Compte rendu des Travaux de la Société de Médecine de Lyon: par G. Montain, D.M.P. 8vo. Lyon, 1824.
——	Statistica Vaccinica Napolitana (Corso di un Dodicennio dall' Anno 1808 al 1819): del Dott. Miglietta. 4to. Napoli, 1820.
Mr. Brookes.	A Prodromus of a Synopsis Animalium, comprising a Catalogue Raisonnée of the Zootomical Collection of Joshua Brookes, Esq. F.R.S. &c.
The Editor.	The American Journal of Medical Sciences. No. 2. Feb. 8vo. Philad. 1828.
Mr. Broster.	Progress of the Brosterian System for the Effectual Removal of Impediments in Speech. 4th year. 12mo. 1827.
M. Nicod.	Recueil d' Observations Médicales confirmant la Doctrine de Ducamp, sur la Cautérisation de l'Urètre. Par M. P. L. A. Nicod. Tome 1. 8vo. Paris, 1825.
Dr. Burne.	An Oration on the Principles of the Practice of Medicine, delivered before the Medical Society of London on Saturday, March 8, 1828. By John Burne, M.D. 4to. London, 1828.
Mr. John Edward Gray.	A Collection of Spanish Tracts on Epidemical Diseases, in 2 Vols. 8vo.

Donors.	*Donations.*
Dr. Philip.	A Treatise on Indigestion and its Consequences called Nervous and Bilious Complaints; with Observations on the Organic Diseases in which they sometimes terminate. By A. P. W. Philip, M.D., F.R.S. L. and E., &c. 6th Edition. 8vo. London, 1828.
The Editor.	The Magazine of Natural History and Journal of Zoology, Botany, Mineralogy, Geology and Meteorology. Conducted by J. C. Loudon, F.L.S. &c. No. 1.
Dr. Lambe.	An Investigation of the Properties of the Thames Water. By William Lambe, M.D. 8vo. London, 1828.

INDEX

TO

VOLUME FOURTEENTH.

A. Page

ANALYSIS of a specimen of cutaneous perspiration 424

B.

Bostock, Dr., analysis of a specimen of cutaneous perspiration 424
———— on the catarrhus æstivus, or summer catarrh 437
Bright, Dr., account of a case in which the cutaneous perspiration was analyzed 433
Brodie, B. C., on injuries of the brain 325

C.

Catarrhus æstivus, account of the 437
Cutaneous perspiration, analysis of 424

D.

Dobson, Dr., on the treatment of erysipelas by numerous punctures 206

E.

Erysipelas, on the nature and treatment of.... 1
———— cases of simple 81
———— cases of, treated by incision 132

Page
Erysipelas, treatment of, by numerous punctures 206
———— case of, with some remarks..... 213
Eye, on a peculiar inflammatory disease of the 286

H.

Hutchison, A. Copland, on erysipelas 213

I.

Incisions in the treatment of erysipelas .....132 & 213
Inflammation of the cellular structure, cases of..... 198
Injuries of the brain, pathological and surgical observations relating to..... 325

L.

Lawrence, William, on the nature and treatment of erysipelas 1

P.

Perspiration, analysis of cutaneous 424
Punctures in the treatment of erysipelas 206
Pus and lymph, depositions of, in the lungs and other viscera, after injuries in different parts 251

R.

Rose, Thomas, on depositions of pus and lymph occurring in the lungs and other viscera, after injuries of different parts of the body 251
Rupture of the stomach, case of, produced by vomiting... 447

S.

Seymour, Dr., on tumours in the abdomen arising from organic disease in the stomach 222
Stomach, on rupture of the, produced by vomiting 447

T.

Page

Tumours in the abdomen from organic disease of the stomach..... 222

W.

Wallace, William, on a peculiar inflammatory disease of the eye 286

Weekes, J. Norman, on rupture of the stomach produced by vomiting 447

THE END.

G. Woodfall, Printer, Angel Court, Skinner Street, London.

Jos.h Perry lithog. J.H. Newton del.

Printed by C. Hullmandel

Pub.d by Longman, Rees, Orme, Brown & Green March. 1828.

Jos.h Perry lithog. J.H. Newton del.

Printed by C. Hullmandel

Publ.d by Longman, Rees Orme, Brown, & Green. March. 1828

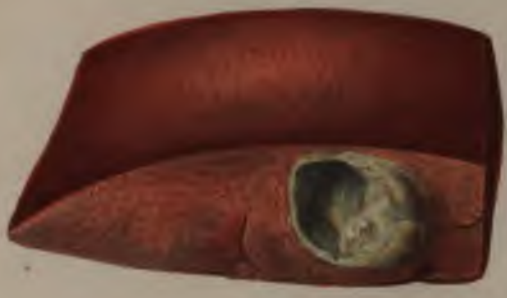
Plate IV Vol X

Joel Parry lithog. d. H. Newton del.

Printed by C. Hullo

Publd by Longman Rees, Orme, Brown & Green March 1828.

Plate V Vol XIV.



Perry lithog J.B. Newton del.

Printed by C. Hullmandel

Publd by Longman, Rees, Orme, Brown & Green, March 1828

DATE DUE

~~JUL 4~~	~~1974~~		